IPVis 4.4 User Guide

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Introduction

IPVis is an online application that presents information about a range of integrated Telstra IP networking services in a topological layout. It does that by extracting and processing information from a number of source systems, and then loading it ready for rendering on the user's PC/Laptop. IPVis aims to give the user the following range of features:

- **Perform extended advance search:** The advanced search feature searches the service repository for the search term that a user has entered. This way the user is able to perform a number of searches for the service elements of the configurable types across the user domain. The user can also locate elements that have editable fields based on both the value stored in the service repository and on the values entered using the IPVis graphical user interface.
- **Browse a selected network,** when advanced search is for a VPN, to see a decomposition of the network into its constituent elements and their respective attributes.
- **Execute queries on certain elements of the Telstra IP network.**
- **View and save reports:** generate, view and save reports of compatible Telstra products and services within the currently displayed service solution. Users can also download and save the reports in the PDF and CSV format.
- **Export service visualisation as an SVG image:** take a visualisation of the network view and export it into a format that can be viewed and edited using Microsoft Visio application.
- Edit allowable attributes or add comments/notes.
- **Add and describe (drag and drop) customer managed elements associated with a network solution.**
- **Group network objects:** group the network elements based on location and name attributes. Additionally, users can also choose to visualise the subsets of the service model using the Horizon view functionality.

IPVis is a tool for users that typically have a network design, planning, and/or operational interest or role. It is assumed that the user is familiar with the IP technology elements of the service solution. Typical use cases are:

- **Planned Outage Impacts:** Run an IPVis Planned Outage report to check for impending planned outages and assess impact on the business applications. Alternatively, use the search facility to place the notified service identifier (FNN) of a planned outage in network context.
- **Network Problems:** Check for status of an IP edge interface, accessibility of a site or general network routing issues.
- **Inventory Report:** Run downloadable reports to check against other records of network service inventory.
- **Personalise:** Assign an 'alias' or group name to services, then the search by alias rather than FNN. This would help Telstra staff to refer to service by terms that are more meaningful.
- **Service Changes:** Before raising a service change request, check the service in topology context to identify potential related changes that may also be required. For example, change access bandwidth will also require changes to IP Edge router configuration as well as WAN CPE configuration or back up links. After a service change, check that new effected configuration is consistent with the original request.

Document Purpose, Scope and Audience

This document describes in detail the user interface of the IPVis solution. This document is intended for customers who are interested in using the IPVis solution's user interface and functionality.

It is not within the scope of this document to describe the Telstra on-line customer and user registration and enrolment process required to access the IPVis applet.

Prerequisites for Using IPVis

The IPVis user interface is a Java applet that runs with a Java plug-in within a compatible web browser. Therefore, a user needs to install the Sun Java plug-in before you can access the IPVis user interface.

Important: To successfully launch the IPVis, a user needs to install the Java plug-in first. For more information on installing the Java plug-in, see Installing Java Plug-in.

Many computers will already have a suitable version of the Java run-time plug-in installed. IPVis requires JRE version 5.0 as a minimum. However, version 6 is recommended as it allows dynamic RAM allocation and launch of multiple windows. If the user does not have the appropriate version of the JRE, the version of the plug-in can be downloaded from http://www.java.com.

Important: If the user has not installed the Java plug-in, the IPVis Web page will prompt the user to authorise its download and installation. If automated installation fails, the user can manually download the plug-in. For more information on manually downloading the plug-in, see Installing Java Plug-in.

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At the time this document was written, IPVis has been successfully tested on the following platforms and web browsers and is compatible with the following (though note that this may change over time):

- **Operating Systems**: Microsoft® Windows® Vista, Windows® XP, Windows® 7, UNIX, Linux.
- **Web browsers**: Internet Explorer 6, 7, 8, 9, Firefox v1.0.7, 2.x, 3.x, 4.x, 5.0.
- **Java plug-in**: V5.0x all versions supported (some functions not available); V6.0 or later (recommended).

Starting IPVis

Access to IPVis for users from the internet (typically customers) and internal Telstra staff is different.

IPVis Customer Access

For customers, IPVis access must be enabled by Telstra. Contact your account representative for assistance.

Once access is enabled, IPVIS can be accessed from within a Telstra internet portal, using the URL provided. Telstra Business customers will go to “My Account”, Choose “Networks and Security”, then choose “IP Self-Serve portal”, and choose “IP VIS” (refer Figure i). Telstra Enterprise and Government customers will use the Telstra Your Telstra Tools portal, and choose “IPVIS” from the “Managing Services” section (refer Figure ii). You will need to log in using your Telstra credentials (normally a username, password and business ID).

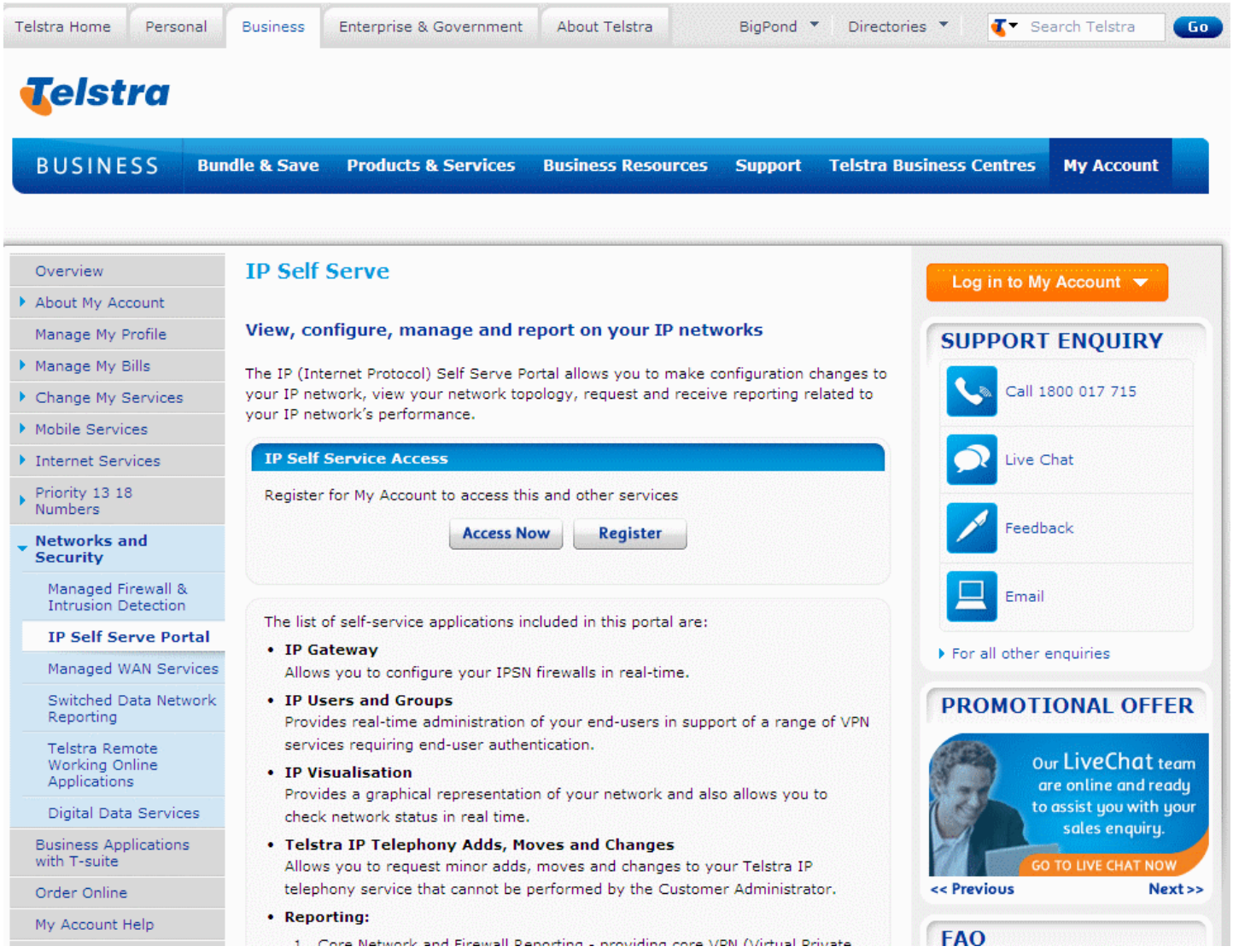
Telstra Home
Personal
Business
Enterprise & Government
About Telstra
BigPond
Directories
Search Telstra
Go
Telstra
BUSINESS
Bundle & Save
Products & Services
Business Resources
Support
Telstra Business Centres
My Account
Overview
About My Account
Manage My Profile
Manage My Bills
Change My Services
Mobile Services
Internet Services
Priority 13 18 Numbers
Networks and Security
Managed Firewall & Intrusion Detection
IP Self Serve Portal
Managed WAN Services
Switched Data Network Reporting
Telstra Remote Working Online Applications
Digital Data Services
Business Applications with T-suite
Order Online
My Account Help
IP Self Serve
View, configure, manage and report on your IP networks
The IP (Internet Protocol) Self Serve Portal allows you to make configuration changes to your IP network, view your network topology, request and receive reporting related to your IP network's performance.
IP Self Service Access
Register for My Account to access this and other services
Access Now
Register
The list of self-service applications included in this portal are:
IP Gateway
Allows you to configure your IPSN firewalls in real-time.
IP Users and Groups
Provides real-time administration of your end-users in support of a range of VPN services requiring end-user authentication.
IP Visualisation
Provides a graphical representation of your network and also allows you to check network status in real time.
Telstra IP Telephony Adds, Moves and Changes
Allows you to request minor adds, moves and changes to your Telstra IP telephony service that cannot be performed by the Customer Administrator.
Reporting:
Log in to My Account
SUPPORT ENQUIRY
Call 1800 017 715
Live Chat
Feedback
Email
For all other enquiries
PROMOTIONAL OFFER
Our LiveChat team are online and ready to assist you with your sales enquiry.
GO TO LIVE CHAT NOW
<< Previous
Next >>
FAQ

Figure i. IPVis access from My Account homepage (Telstra Business)

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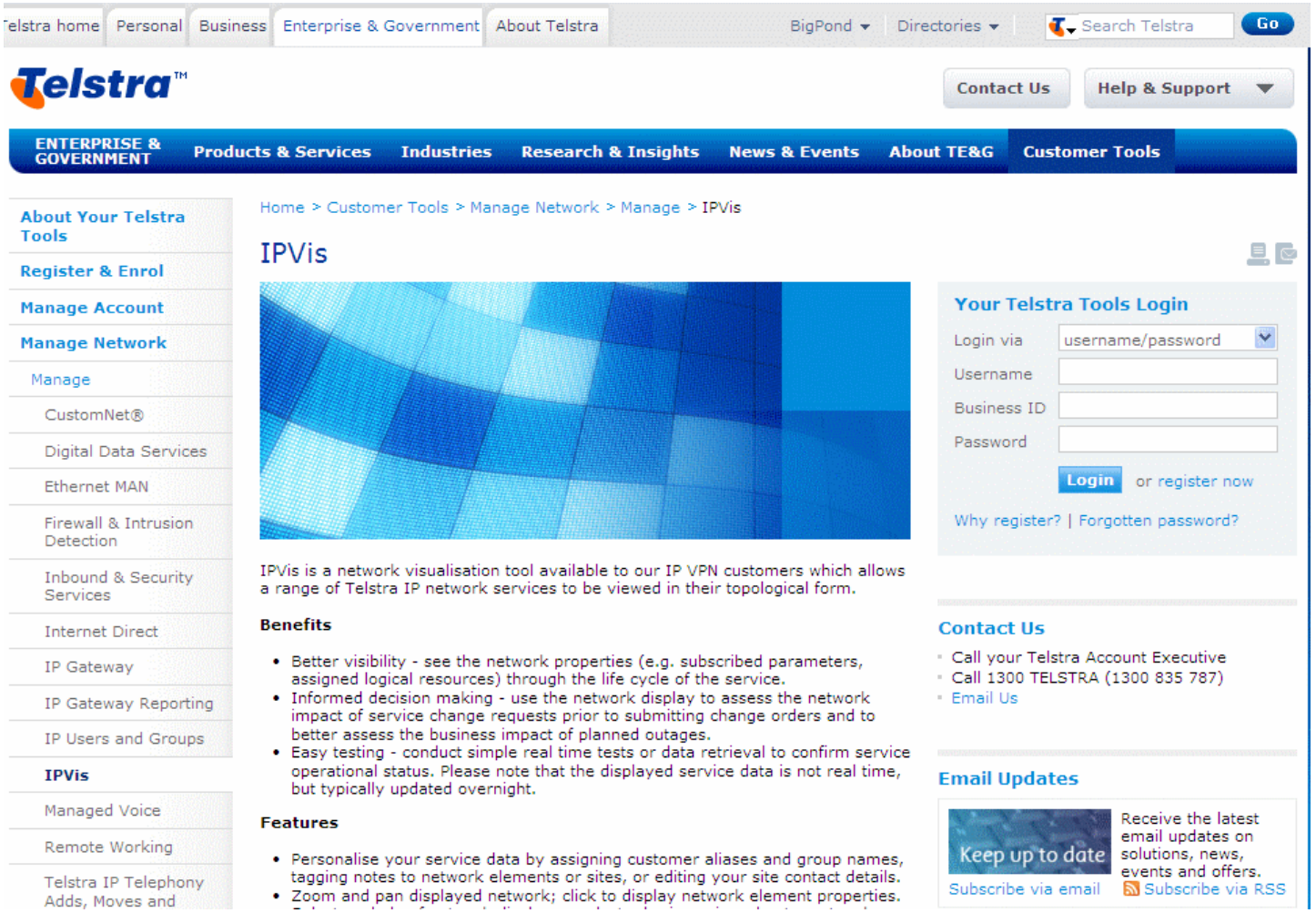
elstra home
Personal
Business
Enterprise & Government
About Telstra
BigPond
Directories
Search Telstra
Go
Telstra
Contact Us
Help & Support
ENTERPRISE & GOVERNMENT
Products & Services
Industries
Research & Insights
News & Events
About TE&G
Customer Tools
About Your Telstra Tools
Register & Enrol
Manage Account
Manage Network
Manage
CustomNet®
Digital Data Services
Ethernet MAN
Firewall & Intrusion Detection
Inbound & Security Services
Internet Direct
IP Gateway
IP Gateway Reporting
IP Users and Groups
IPVis
Managed Voice
Remote Working
Telstra IP Telephony Adds, Moves and
Home > Customer Tools > Manage Network > Manage > IPVis
IPVis
IPVis is a network visualisation tool available to our IP VPN customers which allows a range of Telstra IP network services to be viewed in their topological form.
Benefits
Better visibility - see the network properties (e.g. subscribed parameters, assigned logical resources) through the life cycle of the service.
Informed decision making - use the network display to assess the network impact of service change requests prior to submitting change orders and to better assess the business impact of planned outages.
Easy testing - conduct simple real time tests or data retrieval to confirm service operational status. Please note that the displayed service data is not real time, but typically updated overnight.
Features
Personalise your service data by assigning customer aliases and group names, tagging notes to network elements or sites, or editing your site contact details.
Zoom and pan displayed network; click to display network element properties.
Your Telstra Tools Login
Login via
username/password
Username
Business ID
Password
Login
or register now
Why register? | Forgotten password?
Contact Us
Call your Telstra Account Executive
Call 1300 TELSTRA (1300 835 787)
Email Us
Email Updates
Keep up to date
Receive the latest email updates on solutions, news, events and offers.
Subscribe via email
Subscribe via RSS

Figure ii. IPVis access from Your Telstra Tools homepage (Telstra Enterprise & Government customers)

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The home page has two sections (refer Figure iii):

- The **upper section** displays a table listing all IP VPNs associated with the customer. Clicking on a 'View Network' button launches the Java applet to display the full VPN view. A user can launch multiple network views in different windows concurrently, if Java version 6 is used.
- The **lower section** has the Advanced Search facility as described later. Since some customers also have other networks such as Ethernet MAN, Telstra Managed CPE, and Layer 2 based VPNs based on Frame Relay, ATM and Ethernet-Lite access, this facility allows search on these other networks and their elements and attributes as well as that of IP VPNs.

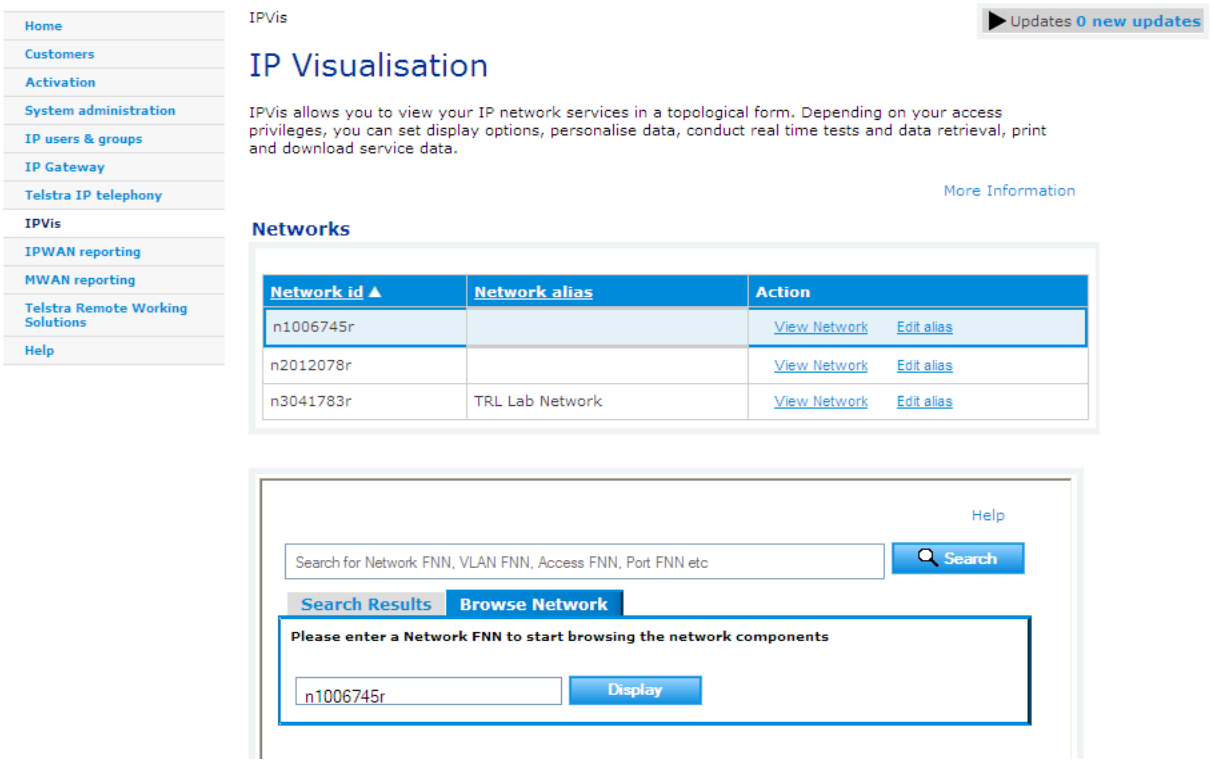

Figure iii. IPVis home page on the customer portal

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IPVis Staff Access

Using the **Web browser**, navigate to the IPVis URL provided to you and then click enter. The IPVis staff home page allows two entry options (refer Figure iv):

- A Graphical Network Viewer which displays a table of all network views maintained by IPVis. The user can search and a network based on network FNN, customer name or customer identifier.
- An Advanced Search window to search on the entire network inventory data held by IPVis. Based on outcome of search, the user can launch either a full service view or a horizon view, generate reports or browse a network.

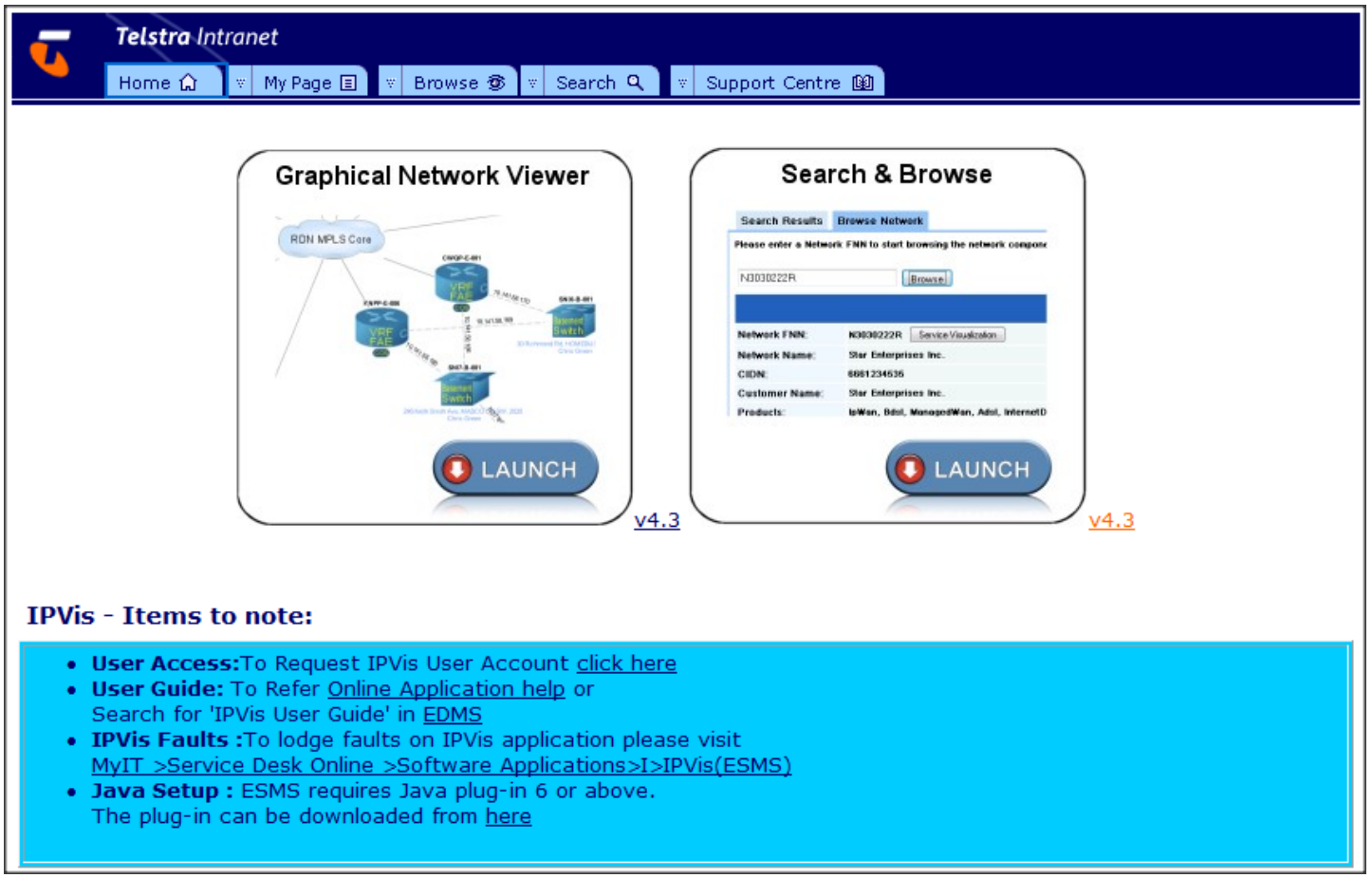

Figure iv. IPVis Staff Home Page

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Navigating in IPVis

IPVis allows a user to visualise related service elements of a customer solution in a single view. The view provides a service topology and, based on user privileges, will allow a user to execute real-time tests and information requests on the network elements and much more.

When a user starts the IPVis solution window, it opens the graphical user interface showing the network view for the selected customer solution. The information, features and level of detail shown in the IPVis interface is determined by the staff or customer user profile assigned. Based on user profile, the graphical layout displays network elements, services and the links for the chosen service solution. The graphic below displays the different components of the IPVis window.

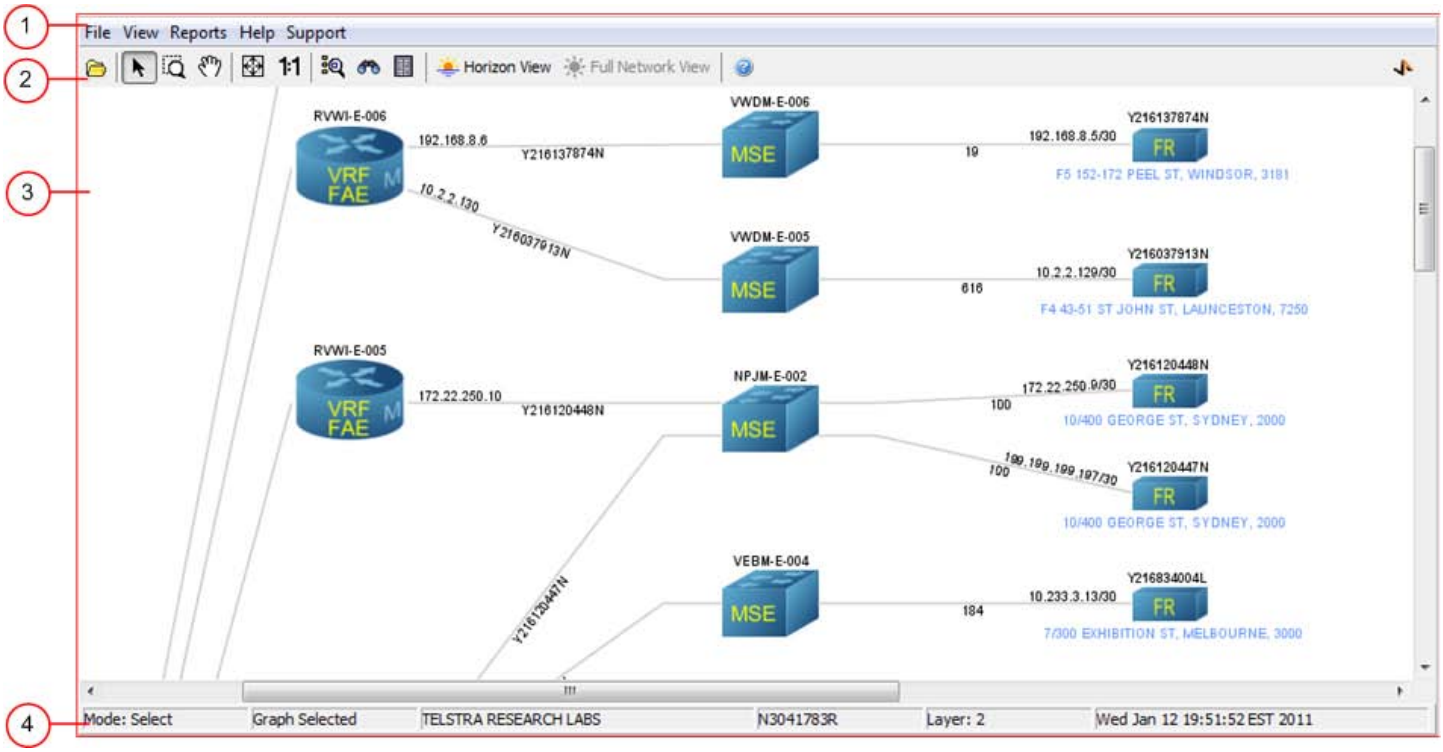

Figure 1

The following table describes the different components of the **IPVis** window.

Component Number	Description
1	**Menu bar**. It contains different menus and submenus that enable a user to perform various functions on the IPVIS window, such as **Export**, **Print**, **Zoom**, change layout and much more.
2	**Toolbar**. It provides quick access to navigation and search features that assist in locating information of interest.
3	**Network View**. The main display area that shows the service topology provides access to context aware menus and presents results of assurance activities.
4	**Status bar**. It displays the currently selected tool, node, customer network, ID and time and date of latest network change.

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Quick Start to using IPVis

IPVis will display the solution in its main screen irrespective of the number of elements. For large solutions, this may present a diagram that provides a feel for the topology at a size that makes viewing labels and attributes impractical. The quick start to IPVis provides a guide on how to use the navigation and search features to rapidly home in on the area of interest.

The quick start approach can be used for many solution sizes and will help a user to get the best out of IPVis. Additional detail on IPVis features are described in later sections of this manual.

Starting with any solution displayed in the network view, select the search tool which is identified by the binocular icon from the tool bar. Figure 2 below shows the location of this feature in the application

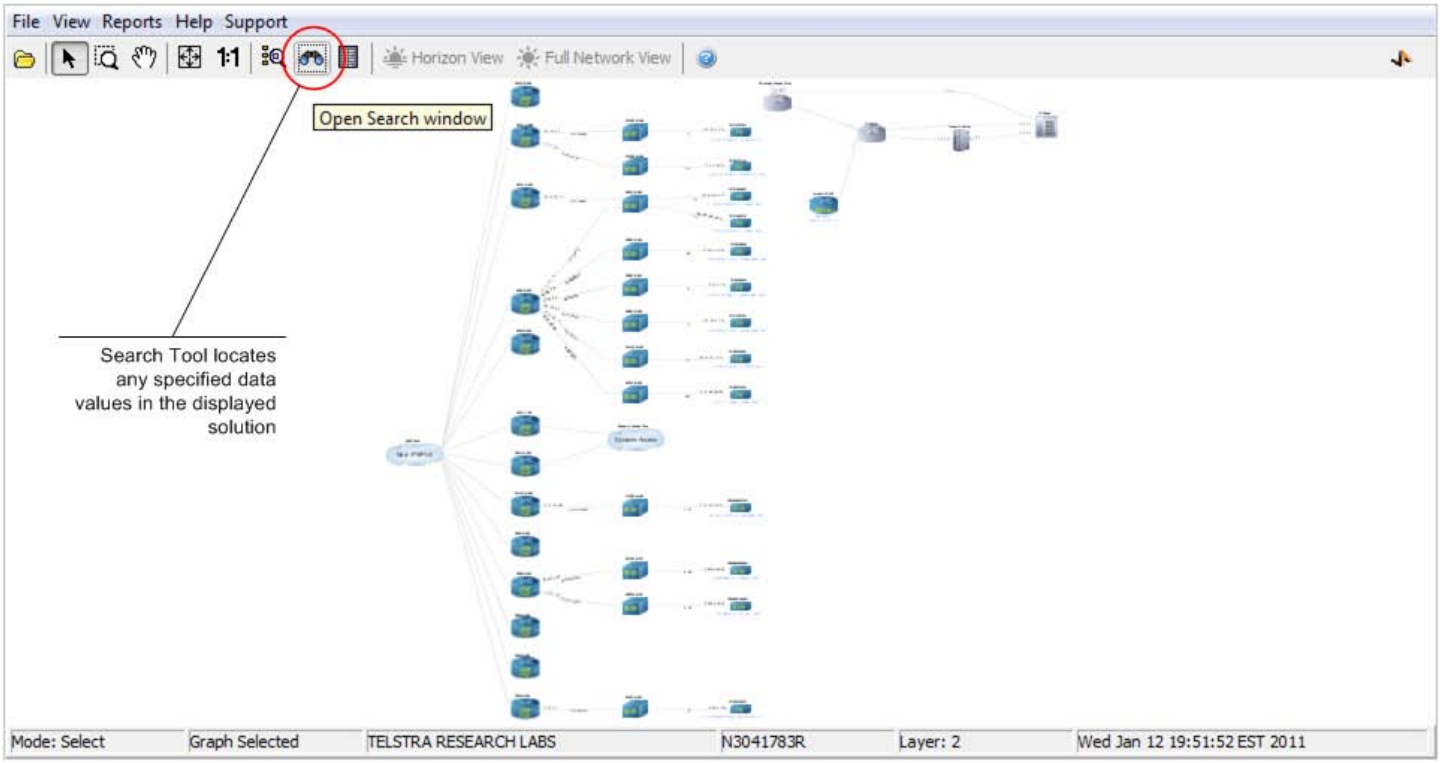

Figure 2

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Quick Start - The Search Dialog

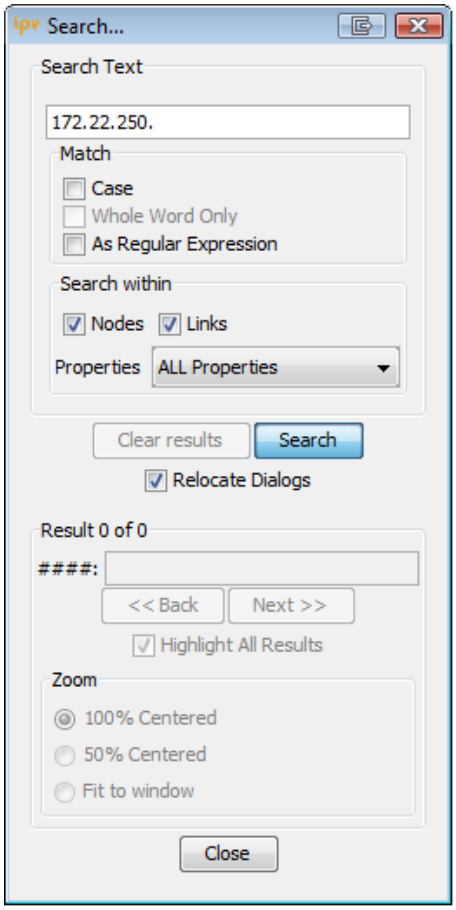

Figure 3

The user will be presented with a dialog box as shown in Figure 3 that prompts for a search term. In most cases the options can be left at their default settings and the user only needs to enter a value in the search text field, after which the user will click on the search button in this dialog.

The value entered in the search text will be compared across the available data in the displayed solution with the successful result of the search having the following actions

- The dialog will show the number of matched data values
- The first match will be selected and centred in the graphical display
- The display will be zoomed so the object is identifiable
- All objects that have a matching value will be highlighted
- A properties dialog will be opened for the centred object in the display

The value entered in the search text field can be a value the user could anticipate being part of a service description, for example

- A substring
- Partial number
- Contact person’s name
- Address
- IP Address

If required options in the dialog change the behaviour of the search such as respecting case or using regular expressions and can be used if the user needs to minimise the number of matches.

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Quick Start – Returned Search Results

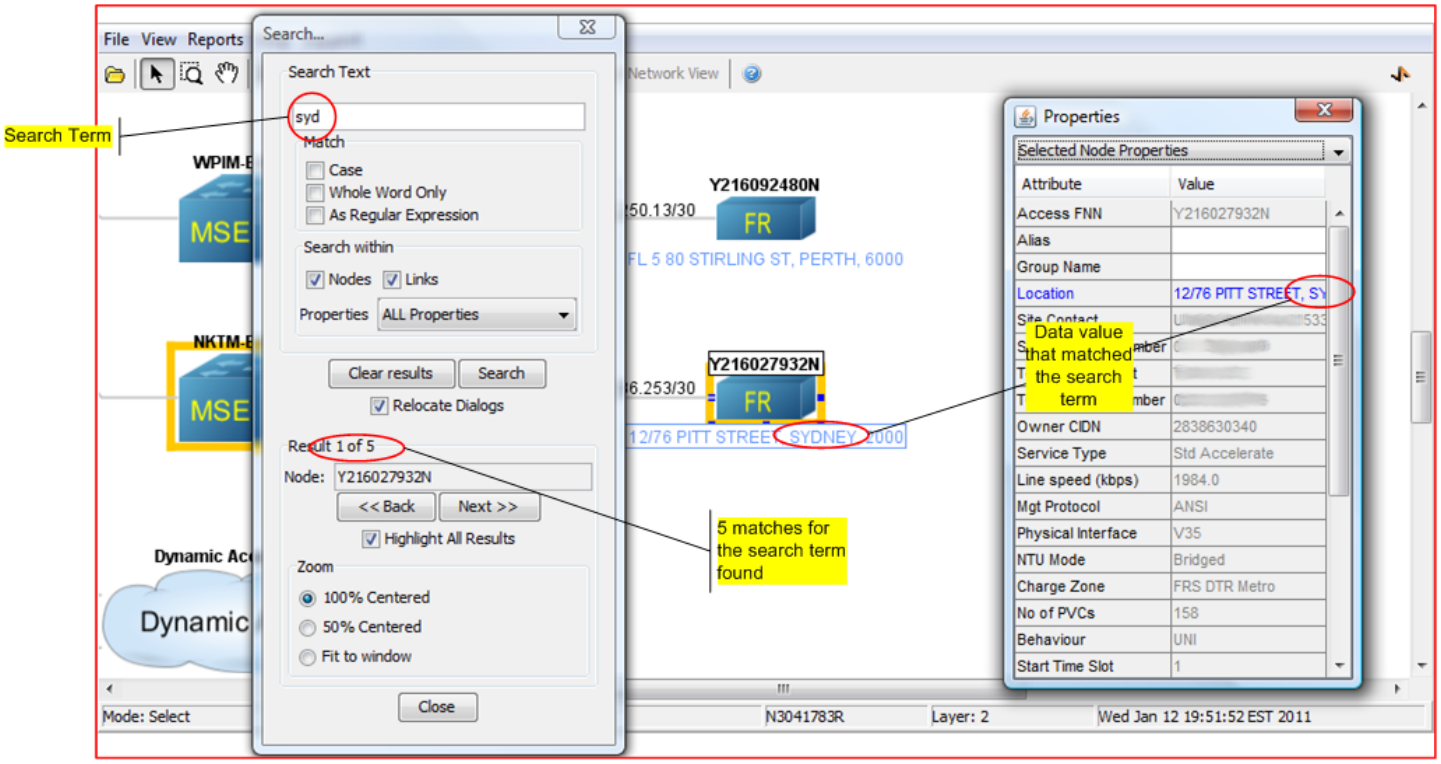

Figure 4

The example shown in Figure 4 has used the string “syd” as the search term, this has found matches with the value “SYDNEY” that is a substring of the ***Location*** attribute.

- The search dialog is indicating 5 matches to this value of “syd” with the first match being the access node “Y216027932N”.
- The main display has selected and centred the first found object in the middle of the display.
- The main display has scaled to make the first found object more visible
- A highlighted border has been placed around all objects that are in the returned result set.
- A node properties dialog has been opened for the selected node allowing the properties to be inspected.

Note in this example the label on graphical display is taken from the attribute called Location

Use of the Back and Next buttons in the search dialog will bring to the centre of the display the next or prior match of the returned search result and have the properties of that object displayed in the open properties dialog.

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Quick Start – Overview Window

IPVis has an overview window that helps maintain awareness of what part of a solution a user may be looking at when the presentation has been zoomed to show a portion of a much larger visualisation.

This feature is accessed from the tool bar and uses an icon of a magnifying glass.

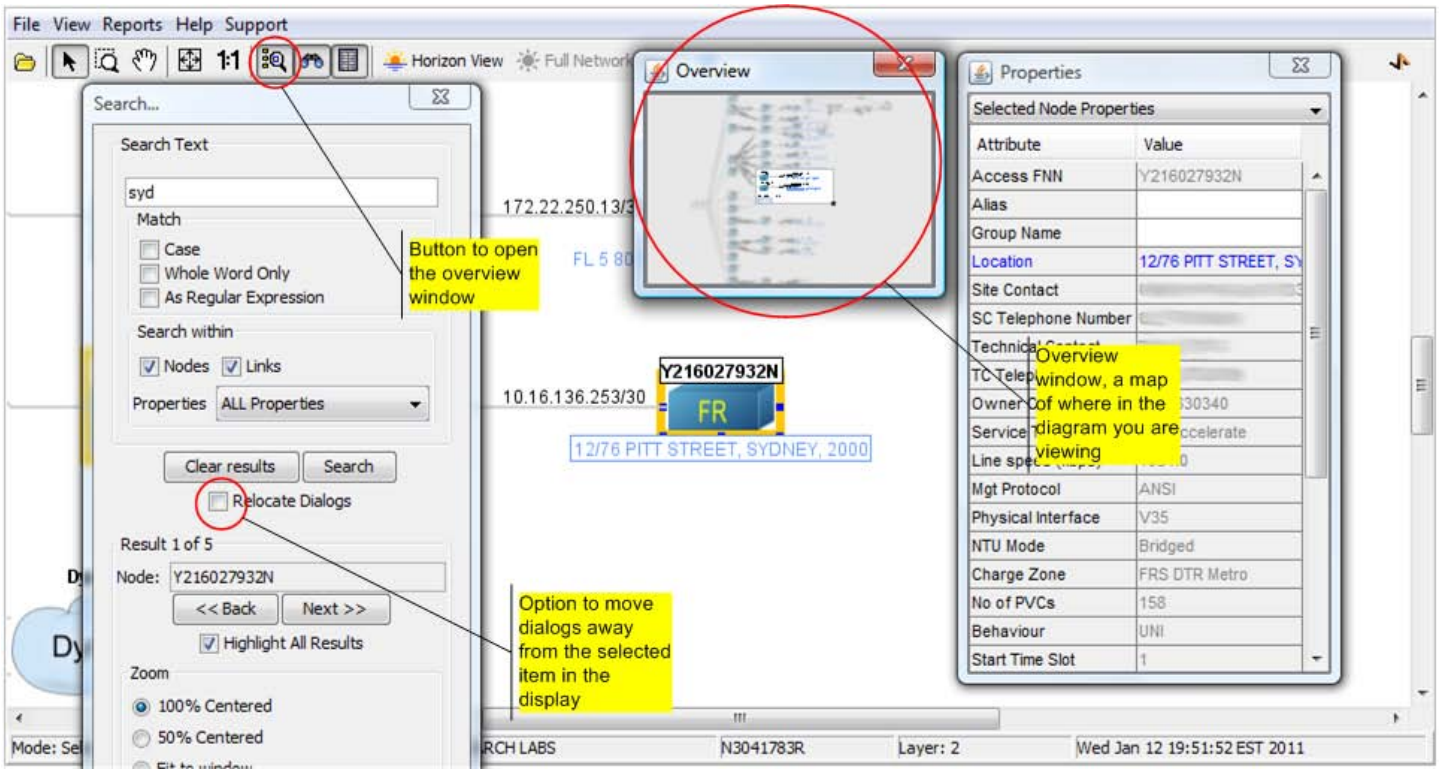

Figure 5

The above Figure 5 shows the overview window with the scaled area in the main display represented by the non-shaded area in the overview dialog.

If the “Relocate Dialogs” option in the search dialog is checked, open dialogs are automatically moved away from the centred objects in the main display. This is to ensure that a dialog box will not obscure the centred object. If a user wishes to have the Overview dialog remain in a static position on the screen whilst the user conducts further searches, remove the check mark from the “Relocate Dialogs” option in the search dialog.

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Opening a service view

Opening a service topology to view in IPVis depends on how IPVis is being made available.

For some class of users, choosing different solution to views may be performed from within the IPVis application. In other cases IPVis may be automatically launched using the customer context from another environment.

The most common ways of opening a service topology are:

- Directly from the applet using the File menu option (staff Graphical Network Viewer only);
- Indirectly from an advanced search capability describer later in this document;
- Through a customer portal that provides the context for the service topology; and
- Indirectly through a third party application that makes a call to IPVis.

The services available to the end user depend on the security framework for each of the different methods in invoking IPVis in conjunction with the policies in place for the class of end user.

Using the IPVis Menus

The IPVis menu bar consists of following menus:

- **File:** Using the **File** menu, you can access the **Open** (staff only), **Export**, **Page Setup**, **Print Preview** and **Print** submenus.
- **View:** Using the **View** menu, you can access the **Layout**, **Navigate**, **Overview**, **Properties**, **Search**, **Zoom**, **Reset Network Status Display**, **Full Network View**, **Refresh**, **Grid** submenus and many more options.
- **Reports:** Using the **Reports** menu, a user can access the **Summary of View, Drag and Drop Report**, **Access Services Report**, **Service Inventory Report**, **Service Configuration Report**, **Planned Outage Report** submenus.
- **Help:** The **Help** menu enables a user to invoke the help information about the application.
- **Support:** Using the Support menu, a user can access the **Feedback** and **Help Desk** submenus.

Note: Menu items tagged with (optional) are dependent on these features being enabled for the specified user profiles and their deployment is at Telstra's discretion.

Understanding the File Menu

The following submenus are accessible from the **File** menu:

- **Open:** (staff graphical Network Viewer)**:** It is used to select and open different customer network views from the list of the available customer service networks. The shortcut key for the **Open** submenu is **CTRL+O**.
- **Export:** It is used to export or save the network view or graph into various formats, such as PDF, SVG etc. The shortcut key for the **Export** submenu is **CTRL+E**. PDF option more suitable for small network. Also refer to downloadable Service Access PDF report.
- **Page Setup:** It is used to change or set the page layout of the network graph or view before printing it.
- **Print Preview:** It is used to preview the network view before printing it.
- **Print:** It is used to print the network diagram. The shortcut key for the **Print** submenu is **CTRL+P**.

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To open the customer network view

The file menu is typically available to operations or support persons who require access to different customer solutions and is provided in the IPVis application. Where IPVis is invoked through a customer portal or other service that provides the customer context, the **Open** menu may be disabled.

1. (Staff only) From the **File** menu, click the **Open** menu; it opens the **Service Selection** dialog box.
2. (Staff only) Select the customer name you want to open from the available list, and then click the **Ok** button. It opens the customer service network. Alternatively, you can enter the CIDN number, FNN, Customer Name or Network name under **Search box** and then click the **OK** button. Use the **Cancel** button, if you do not want to open any customer network view.

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To export the network view

Note: The **Export** submenu is used to export or save the network view in one of the several formats such as SVG, PDF. Additionally, a user can modify the network view and its elements, if the user exports the network view into a **SVG** format. A user can open or import the saved SVG file into the Microsoft **Visio** ™ where it can be modified or changed. The procedure below describes exporting the network view into the **SVG** format.

1. From the **File** menu, click the **Export** submenu; it opens the **Export** dialog box.

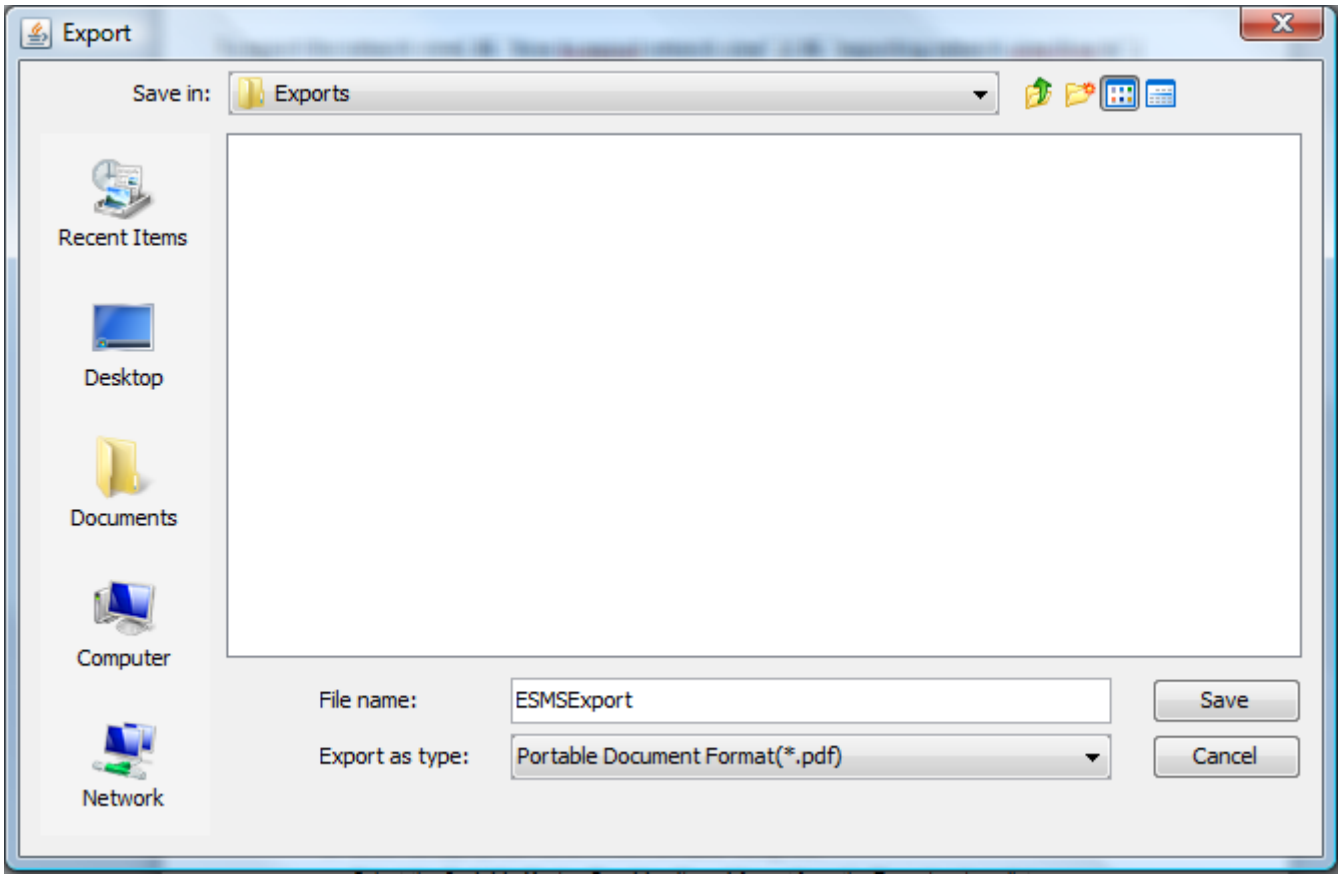

Figure 6

2. On the **Export** dialog box, do the following:
   - Select the appropriate location or folder from the **Save in** list.
   - Enter the appropriate name in the **File name** dialog box.
   - Select the **Scalable Vector Graphics (*.svg)** format from the **Export as type** list.
   - Click either **Export Graph** or **Export View** as required. Note that the **Export Graph** option will select the entire graph while the **Export View** option selects only the current view.
3. Click the **Save** button, the graph or view is saved at the appropriate location. To cancel the operation, click the **Cancel** button.

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To import the network view into Microsoft Visio™

1. Open the **Visio** application and then from the **File** menu, click the **Open** submenu, the **Open** dialog box appears.
2. In the **Open** dialog box, locate the **SVG** file that you have saved as described in the above procedure and then click the **Open** button.
3. The file is opened as a Visio object. You can now modify the network view as per your requirements.

To change the page setup of the network view

1. From the **File** menu, click the **Page setup** submenu; it opens the **Page Setup** dialog box.
2. Modify the **Orientation** as required and select the appropriate option from the **Clip Area** and then click the **Ok** button. The page setup properties are modified.

To print preview the network view

1. From the **File** menu, click the **Print Preview** submenu. The **Print Preview** dialog box appears.
2. Select the appropriate settings and then click **Print** button, it prints the network view.

To print the network view

1. From the **File** menu, click the **Print** submenu; it opens the **Print** dialog box. If required modify or change the print settings.
2. Click the **Ok** button to print the network view. Alternatively, click the **Cancel** button to cancel the printing.

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Understanding the View Menu

The table below summarises the various submenus of the **View** menu and their use. And their detailed description is covered in the following sections.

Submenu name	Description
Layout	Using the **layout** submenu, you can change the network layout to **Circular**, **Symmetric**, **Hierarchical (Top to Bottom)**, **Hierarchical (Left to Right)**, **Hierarchical (Right to Left), Group by group name**, **Group by Location**. Also, you can group the different network elements either by their name or location attributes.
Navigate	Using the **Navigate** submenu, a user can perform following actions **Select**, **Zoom**, **Pan**, **Fit to Window** (Ctrl+F), **Actual Size** (Ctrl+A), **Zoom In** (Ctrl+Numpad +), **Zoom Out** (Ctrl+Numpad -)
Overview	Using the **Overview** submenu, a user can open the overview window.
Properties	Using the **Properties** submenu, a user can open the **Properties** dialog box.
Filter	Using the **Filter** submenu, a user can see network in filtered view. This feature allows a user to specify which group/groups elements you want to see.
Search	Using the **Search** (Ctrl+S) submenu, a user can search information on the network nodes or links.
Zoom	Using the **Zoom** submenu, a user can set and change the zoom level of the network view by selecting any of the levels provided in the submenu option.
Reset Network Status Display	Using the **Reset Network Status Display** submenu, a user can reset the network view display to its default state.
Full Network View	Using the **Full Network View** submenu, a user can view the network view in its default state with all network elements. For example, if a user has activated the horizon view for an Ethernet-Lite (E-Lite) service, then to see the full network view, the can click the **Full Network View** submenu.
Refresh	Using the **Refresh** submenu, a user can refresh the network view. By editing an editable attribute, such as Alias or Comment, and refreshing the view, the IPVis cache of the network is invalidated and refreshed. This is the only means a user has to force a refresh.
Show Planned Outages	Using the **Show Planned Outages** submenu, a user can toggle on/off a tag that appears over those devices that have a planned outage within the next 30 days.
Grid	Using the **Grid** submenu, a can apply grids to the network view. To remove the grid, uncheck the **Grid** submenu.

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Changing the Layouts for the Network View

A user can change the way the network and its elements are displayed by changing the layout of the network from the **Layout** submenu of the **View** menu. The different layouts are:

- Circular layout
- Symmetric layout
- Hierarchical layout (Top to Bottom), (Left to Right), (Right to Left). **Default layout is hierarchical L-R.**

For training purposes, the procedure below explains how to arrange the network view into circular view.

To change the network view layout

1. To change the layout of the network, from the **View** menu, point to **Layout** submenu and then click the **Circular** option. The network view changes to the circular layout.

Understanding the Grouping Function

The Grouping function is used to group network elements by their physical location (postcode) or by user assigned group name. The graphic below shows an example of network elements grouped by postcode.

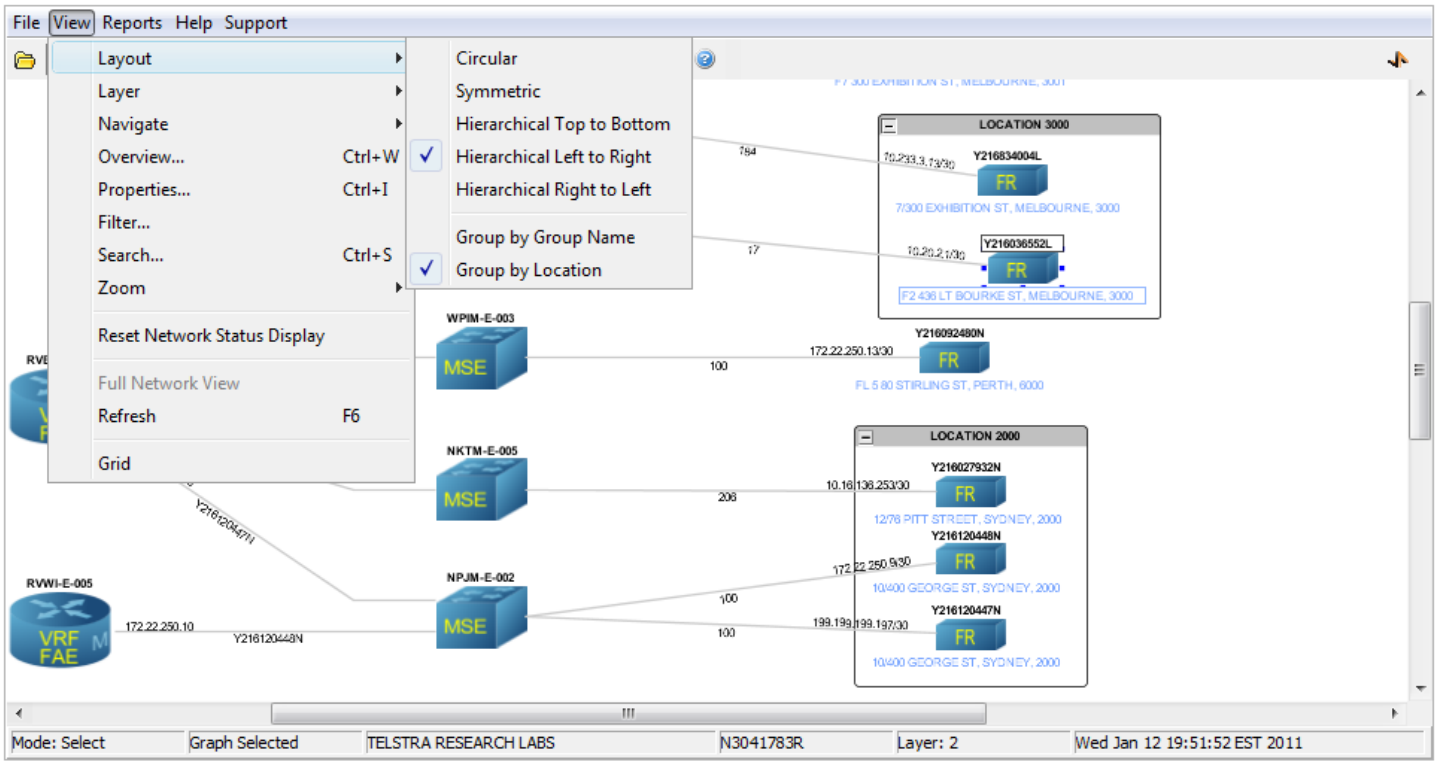

Figure 7

Note: The Group function can be used with any network elements that contain a physical address (group by location) or user assigned group name (Group by Group Name).

To group the network based on location

1. From the **View** menu, point to **Layout** submenu and then click the **Group by Location** option, the network elements are grouped by the location.

The display has been reorganised to place objects at the same postcode inside containers, the minus symbol (-) in the title of the container can be used to collapse the contained object into a single expandable object.

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To group the network view based on the group name

1. (Optional) Configure the group name property of the nodes you would like to group.
   If you have not already tagged the nodes you would like to group with common names, edit the group name property of the required nodes using the **Properties** dialog box. For more information on changing the properties, see Changing and Displaying Additional Information Using the Properties Tool.
2. Then from the **View** menu, point to **Layout** submenu and then click the **Group by Group Name** option. It displays the network elements grouped together.

To deactivate the group function

1. To deactivate the group function, from the **View** menu, point to **Layout** submenu and then uncheck or clear the **Group by Group Name** or **Group by Location** option. It deselects the grouped network elements.

Note: The **Group by Group Name** and **Group by Location** function can be used independently or concurrently. When used concurrently the graph is first grouped by group name and then further it is grouped by location (postcode).

Using the Select Tool

The **Select** tool is used to select different elements of the VPN network. When in select mode, the mouse pointer changes to an arrow and then the pointer can be used to select and move the nodes of the network to a different location.

Note: You can also select multiple objects or elements by dragging the mouse pointer over an area encompassing different objects. All the objects in the area are selected.

To select and move an object in the IPVis window

1. From the **View** menu, point to the **Navigate** submenu and then click **Select**, the mouse pointer changes to select mode. Alternatively, on the **toolbar**, click the **Select** mode, and then click the **object** to select, the object is selected.
2. To select multiple objects, do the following:
   - Drag the mouse pointer over the area you want to select, a rectangle appears. All the objects in the rectangle are selected.
3. To move, drag the object to the required location. Note that you can also drag multiple objects in the similarly way.

Zooming Objects using the Zoom Tool

The **Zoom** tool is used to zoom a particular element or view of the network. When the network is in zoom mode, the mouse pointer can be used to magnify or shrink a region or view. This enables an enhanced visibility of the VPN network elements.

To activate the Zoom tool, from the **View** menu, point to **Navigate** submenu and then click **Zoom**, the mouse pointer changes to the zoom mode.

Alternatively, click the **Zoom** tool from the **toolbar** to activate and use its functionality. To zoom an area or an object, draw a boundary by dragging the mouse pointer. The selected area is magnified to fill the window.

Additionally, you can zoom in or zoom out the network view using the mouse scroll button.

To return the objects to the normal zoom state, use the **Fit to Window** tool as described below.

To zoom objects in the IPVis window

1. To zoom objects in the window, do the following:
   - To zoom over an area containing objects, click the **Zoom** tool on the **toolbar**, and then drag the mouse pointer to draw a boundary over the area. All the objects in the boundary are magnified. Alternatively, you can activate the zoom tool from the **View** menu.

Important: Remember to switch back to the **Select** mode; otherwise clicking in the window would further magnify the view.

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Using the Pan Tool

The **Pan** tool is used to enable the **Pan** mode for the network diagram. In this mode, you can use the mouse pointer to drag the network view within the window.

Panning the view can also be achieved by using the scroll bars at the bottom and right of the window.

Note: The Pan functionality using the scroll bars is always available regardless of the zoom state. But the scroll bars will only be present if a portion of the network is not currently visible within the window.

The **Pan** tool can be activated from the **Navigate** submenu of the **View** menu or click the **Pan** tool from the **toolbar**. Alternatively, right-click on the empty space, keep it pressed and drag the mouse. Cursor will be changed to Hand. Release the mouse in order to get back to normal mode.

To pan a view

1. Click the **Pan** tool on the **toolbar**, and then drag the mouse pointer on the view. The view moves with the mouse pointer.

   Or

   Right click on the empty space, keep mouse pressed and drag/move it.

Using the Fit to Window Tool

The **Fit to Window** tool will scale the entire view to fit within the current view. Depending on the complexity of the network, this may result in a large number of objects being placed in the view at a scale that may prevent labels from being readable. To use this tool, click the **Fit to Window** tool on the **toolbar**. Alternatively, you can also use the shortcut key **CTRL+F**. Or from the **View** menu, point to **Navigate** submenu and then click **Fit to Window**.

To use the fit to window tool

1. Click the **Fit to Window** tool on the **toolbar** or from the **View** menu, point to **Navigate** submenu and then click **Fit to Window**. The entire view is scaled to fit within the current view.

Using the Actual Size Tool

The **Actual Size** tool 1:1 scales the entire view so that you can view the individual objects in detail. The **Actual Size** tool can be accessed from either the **toolbar** or from the **View** menu.

To use the actual size tool

1. To resize your view, click the **Actual Size** icon 1:1 on the **toolbar**, the view will be scaled so that you can view the individual objects in detail.
2. Alternatively, from the **View** menu, point to **Navigate** and then click **Actual Size**, the network is resized to actual size.

Using the Overview Tool

The **Overview** tool enables you to view the entire network in a small window inside the main window as shown in the graphic below.

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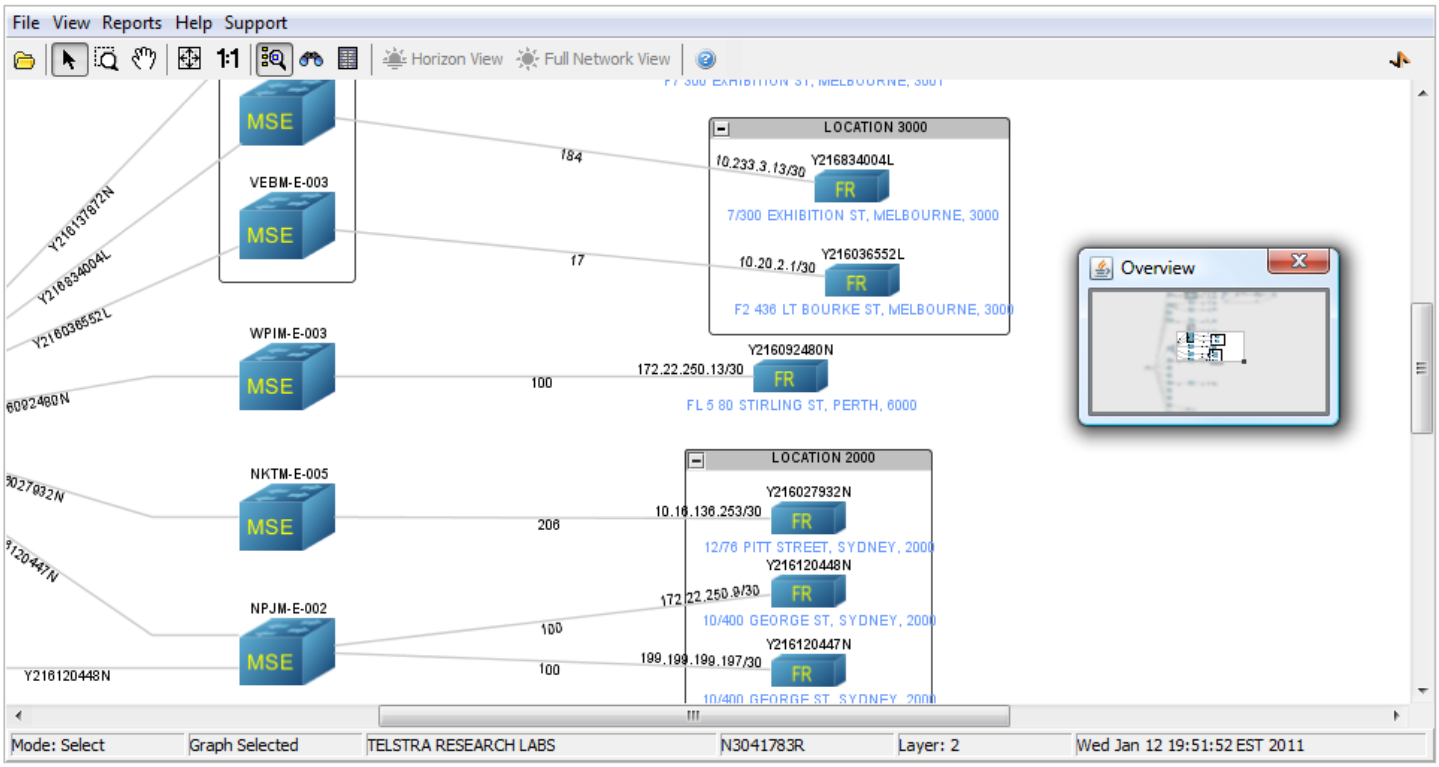

A user can use the **Overview** dialog box to further perform the zoom and pan functions.

If a user performs a zoom operation from within the **Overview** dialog box then the main window reflects the selected zoomed part. Note that the user can drag the **Overview** dialog box and place it at the desired location.

To zoom the network from within the **Overview** dialog box, position the mouse pointer at the bottom-left corner of the square box of the **Overview** dialog box, use the box to zoom in or zoom out the main network view. Stretching the box in and out will change the network view.

Note: The anchor point on the **boundary box** inside the **Overview** dialog box will allow a user to resize the boundary box. Place the mouse pointer over this anchor point to resize the box. Note that as a user increases or decreases the size, it is simultaneously reflected in the main window.

To pan the network area from the **Overview** dialog box, place your mouse pointer inside the **boundary box** and then pan the network using this boundary box.

To open the Overview dialog box

1. On the **Toolbar**, click the **Overview** tool . It opens the **Overview** dialog box inside the IPVIS window.
2. Alternatively, from the **View** menu, click the **Overview** submenu. It opens the **Overview** dialog box.

Using the Properties Dialog Box

The **Properties** dialog box displays the additional information about selected network elements and links. In case no node or network element is selected, then the properties dialog box displays the properties of the network graph.

To open the Properties dialog box

1. Select the object for which you want to display the additional information using the **Select** mode.
2. From the **View** menu, click the **Properties** submenu. It opens the **Properties** dialog box for the selected element. Alternatively, click the **Properties** icon from the **toolbar**. It opens the corresponding **Properties** dialog box.

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Changing and Displaying Additional Information Using the Properties Tool

The **Properties** tool is used to display additional details for the selected object. If no node or link has been selected, the property table displays the properties of the graph. By default properties are read-only and have a grey background.

Most of the properties values are pre-populated. But some properties, such as provider comment, alias, group name etc have been configured as editable; therefore a user can edit these properties.

The editable properties fields are highlighted in white; the rest of the pre-populated properties fields are greyed out. If a property value has been edited by the end-user and its value differs from that provided by the service provider, then the text is displayed in **bold** font. Note that a user can edit them only if the user has appropriate permissions.

Note: A can change or modify these property values for selected network elements only, such as Ethernet port, CPE routers and Ethernet-Lite, ATM, FR links.

To display the **Properties** dialog box, click the **Properties** icon on the **toolbar**. It opens the **Properties** dialog box as shown in the graphic below.

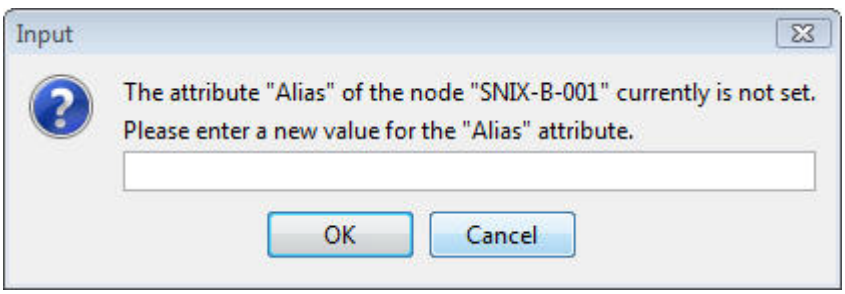
Alternatively, select the network element for which the properties need to be displayed, and then from the **View** menu, click **Properties** submenu, the **Properties** dialog box appears.

To change the network element properties

Note: Not all properties and their values can be modified; a user may only change the properties that are displayed with a white background. Also, from primary network a user cannot change property values for the elements of a linked network (foreign network) and vice versa. For training purposes, the procedure below describes how to modify the properties of a **LAN segment**.

---

1. Select an **Ethernet (Eth-MAN) port** from network topology display, and then click the **Properties** icon from the toolbar The Properties dialog box appears.
2. In the **Properties** dialog box, double-click the **Alias** field, the **Input** box appears.


Input
The attribute "Alias" of the node "SNIX-B-001" currently is not set.
Please enter a new value for the "Alias" attribute.
OK
Cancel

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3. In the **Input** box, enter the appropriate value and click the **Ok** button. Note that the name you specified appears in bold in the **Alias** field. If the name you specified matches the existing value from the database, the alias name does not appear in bold.
4. Similarly, change or modify the Group name, Site Contact and SC Telephone Number using the **Input** box. Click the **Ok** button to save the changes. The **Properties** dialog box updates to show the latest values.

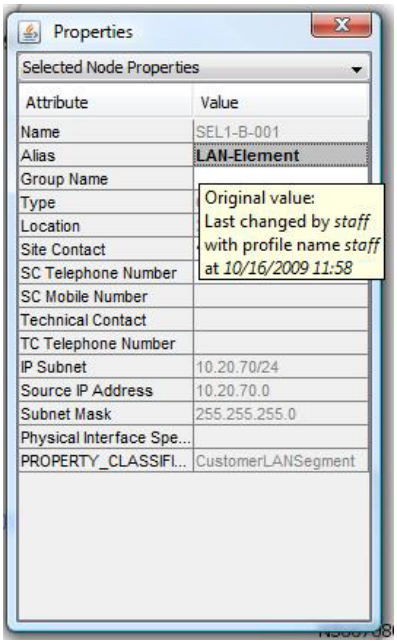
Displaying Auditing Information Using the Properties Tool

Property auditing feature gives user the information about who last edited the property, Original property value, date and time.

Note: You can see audit information of editable property values only. For training purposes, the procedure below uses the example of a **LAN segment**.

To display auditing information using the properties tool

1. Move your mouse cursor over the Alias field; you can view the audit information for the field.

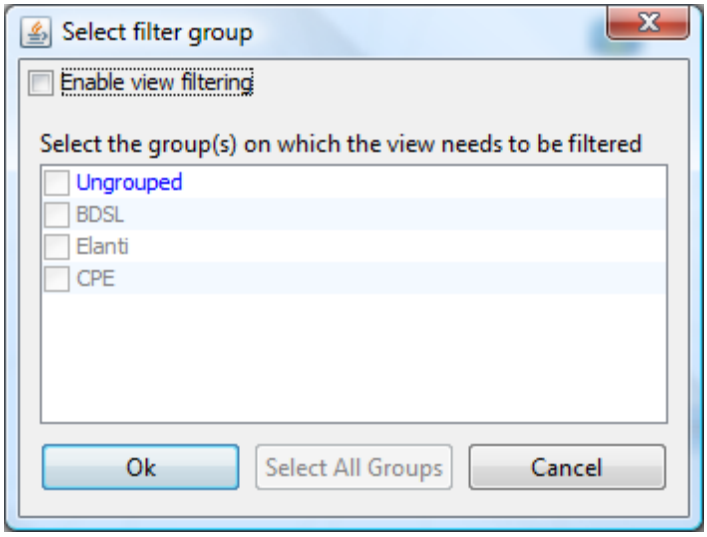


Using the Filter Dialog Box

Using the **Filter** dialog box, you can specify which group or groups to display and print.

To open the filter dialog box

1. From the **View** menu, click the **Filter** submenu, it opens the **Select filter group** dialog box. Note that the 'Ungrouped' option is a virtual group and will show all the elements not assigned to a group. Only ungroup option appears if no group attribute as been edited by any user.



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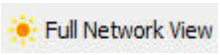
2. Select **Enable view filtering** option, select any group/groups you want to display and click Ok. It will show a new visualisation that is subset of the original visualisation containing set of nodes belonging to the set of selected groups and minimum set of nodes and links required to explain how the selected grouped nodes are interconnected. Note that the Elements must have group name assigned to them from Properties dialog box in order to view groups under this dialog box.
3. Select **Enable view filtering** option, click **Select All Groups** button and click **Ok** button. It will select all the groups available in the list except **ungrouped** option.

To reset filter view to full network view

1. To refresh the network view so that whole network can be displayed, click the **Show Full Network** 

tool from the **toolbar**. Alternatively, from the **View** menu, click **Full Network View** submenu. The network view is refreshed.

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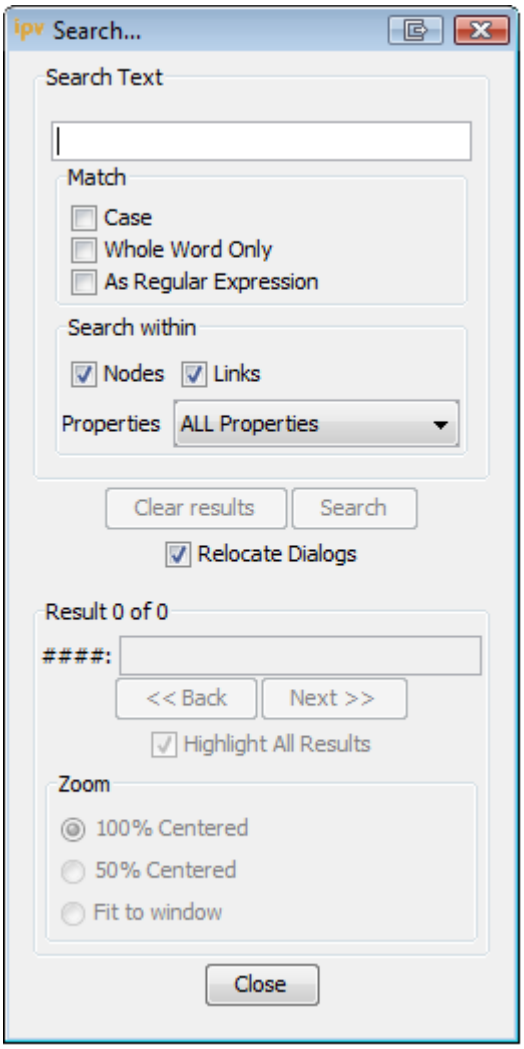
Searching for Information using the Search Tool

Using the **Search** tool , a user can search for text relating to the network including properties associated with nodes as well as links. A user can use this functionality by clicking on the **Search** icon on the toolbar. It opens the **Search** dialog box, where the user can type the search strings as shown in the graphic below. Alternatively, from the **View** menu, click the **Search** submenu; it opens the **Search** dialog box.



The user can specify the search information for:

- Nodes
- Links

Additionally, the user can use the Match case, Whole Word Only or Regular Expression functionality to search for either the exact word or case sensitive information. If the search is not able to locate a match in the nodes, then it will prompt to search the information in links.

Important: The search tool locates attribute (Properties) values and not the name of a label, for example a label name may exist that says ADDRESS, where the address contains the value George Street. Searching for ADDRESS will not return a match, whereas searching for George will.

The matched information is highlighted in the network view. In case you do not want to highlight the search results, deselect the **Highlight All Results** box. If there is more than one matching data, you can navigate to each of the matching instance using the **Next** button or the **Back** button. Nodes that have been identified as having attributes that match the search string are highlighted in the main view by the inclusion of a tick over the object in question; the zoom level of the current view may influence the visibility of these highlights.

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To search for information using the Search tool

1. On the **toolbar**, click the **Search** icon. It opens the **Search** dialog box. Alternatively, from the **View** menu, click the **Search** submenu. It opens the **Search** dialog box.
2. In the **Search** dialog box, do the following:
    - In the **Search Text** box, enter the criterion to be searched.
    - Select **Case**, **Whole Word Only** or **As Regular Expression** option from the **Match** area.
    - Then from the **Search Within** area, select **Nodes** or **Links**. You can select both, depending upon your search requirement.
    - From the **Properties** box, choose the property which you want to include in the search.
3. Then click the **Search** button to start the search. The results matching your search criteria are highlighted in the IPVis window. You can use the **Back** or **Next** buttons to navigate between the search results.
4. You can also select the zoom level from the **Zoom** area. Depending upon the zoom level, it will scale the network view accordingly.
5. Click the **Close** button to close the **Search** dialog box.

A useful example may be to find all the Alias attributes (Property) that have had a value entered.

1. On the **toolbar**, click the **Search** icon. It opens the **Search** dialog box. Alternatively, from the **View** menu, click the **Search** submenu. It opens the **Search** dialog box.
2. In the **Search** dialog box, do the following:
3. In the **Search Text** box, enter a full stop "." (where "."is a regular expression construct for "any" character, see table below)
4. Select **As Regular Expression** option from the **Match** area.
5. Then from the **Search Within** area, select **Nodes** or **Links**. You can select both, depending upon your search requirement.
6. From the **Properties** box, choose the property "Alias" which you want to include in the search.
7. Then click the **Search** button to start the search. If any of the Alias attributes (Property) has a value the search results will identify each object with an Alias value. You can use the **Back** or **Next** buttons to navigate between the search results.

Regular Expression Constructs:

Construct	Description
.	Any character (may or may not match line terminators)
\d	A digit: [0-9]
\D	A non-digit: [^0-9]
\s	A whitespace character: [\t\n\x0B\f\r]
\S	A non-whitespace character: [^\s]
\w	A word character: [a-zA-Z_0-9]
\W	A non-word character: [^\w]

Regular Expression Quantifiers:

Greedy	Reluctant	Possessive	Meaning
X?	X??	X?+	*X*, once or not at all
X*	X*?	X*+	*X*, zero or more times
X+	X+?	X++	*X*, one or more times
X{n}	X{n}?	X{n}+	*X*, exactly *n* times
X{n,}	X{n,}?	X{n,}+	*X*, at least *n* times
X{n,m}	X{n,m}?	X{n,m}+	*X*, at least *n* but not more than *m* times

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Regular Expression Character Classes:

Construct	Description
[abc]	a, b, or c (simple class)
[^abc]	Any character except a, b, or c (negation)
[a-zA-Z]	a through z, or A through Z, inclusive (range)
[a-d[m-p]]	a through d, or m through p: [a-dm-p] (union)
[a-z&&[def]]	d, e, or f (intersection)
[a-z&&[^bc]]	a through z, except for b and c: [ad-z] (subtraction)
[a-z&&[^m-p]]	a through z, and not m through p: [a-lq-z] (subtraction)

Regular Expression Boundary Constraints:

Boundary Construct	Description
^	The beginning of a line
$	The end of a line
\b	A word boundary
\B	A non-word boundary
\A	The beginning of the input
\G	The end of the previous match
\Z	The end of the input but for the final terminator, if any
\z	The end of the input

Further Regular Expression (Regex) Examples:

Ensure the “As regular Expression” tickbox is enabled

- To search for any 11 digit Y-N FNN e.g. Y00000000472N, enter search text: Y[0-9]{11}N
- To search for any 9 to 11 digit Y-N or Y-U FNN e.g. Y216121039U, enter text: Y\d{9,11}[NU]
- To find a device located in Bourke St, Melbourne, enter search text: Bourke St.+Melbourne

Understanding the Help Menu

The **Help** menu enables you to invoke the user guide for the IPVis solution. It also gives information about the IPVis solution.

Understanding the Support Menu

The **Support** menu has the following submenus:

- **Feedback:** The **Feedback** submenu is used to collect customer feedback using a web form.
- **Help Desk:** The **Help Desk** submenu displays a dialog box containing the support contact details for the customers to seek assistance or to report a problem to.

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Using the Context Menu

In the IPVis window, the context menu appears when a user right-clicks a network element or a device or right-clicks on the empty space. Note that its options or contents are context-sensitive and vary according to the device or area the user selects.

To access the context menu and its options, right-click on the network device or on the empty space. The context menu appears.

Analysing the Context Menu Options

The context menu in the IPVis solution may vary depending upon the network device or element selected. The section below describes the options available in the different context menus.

The following table describes the contents of the context menu invoked by clicking on the **empty area** of the IPVis window.

Option	Description
Fit to Window	It is used to re-size the network view to fit in the IPVis window.
Select	It is used to select a network element or device.
Zoom	It is used to zoom the network view.
Pan	It is used to pan the network view.
Properties	It is used to open the properties dialog box for the selected network device or element.
Add Service Element	It is used to add new customer defined network devices such as servers, printer or other network peripherals.
Horizon view	It is used to set the horizon view for the selected network element.

The context menu options for the network devices: **Basement Switch**, **Eth-MAN port**, **MCPE**, **E-Lite** and **Cloud** are as follows:

Option	Description
Select Neighbours	It is used to select the neighbours of the selected network device or element.
Properties	It is used to open the properties dialog box for the selected network element or device.
Horizon View	It is used to set the horizon view for the selected network element.

The context menu options for the customer added network devices such as **servers**, **network printers** or other **peripherals** are as follows:

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Option	Description
Select Neighbours	It is used to select the neighbours of the selected network device or element.
Properties	It is used to open the properties dialog box for the selected network element or device.
Link Service element to	It is used to create a link between two service elements.
Edit Service Element	It is used to open the Service Element Configuration dialog box for editing the service element properties.
Delete Service Element	It is used to delete the Service Element.
Add Application Service	It is used to add a new application service to the customer defined network devices.
Horizon View	It is used to set the horizon view for the selected network element.

The context menu options for the VRF router are as follows:

Option	Description
Ping CPE's	It is used to ping all the CPEs connected to VRF router.
Real Time Tools	It is used to execute tests like Ping, trace-route and display routing table for the network elements connected to the VRF router.
Select Neighbours	It is used to select the neighbours of the selected network device or element.
Select CPE Neighbours	It is used to select the CPE neighbours of the selected network device or element.
Properties	It is used to open the properties dialog box for the selected network element or device.
Horizon View	It is used to set the horizon view for the selected network element.

The context menu options for the link between different network elements are: **Properties** and **Horizon view**.

Using the Fit to Window Option

For more information on using the **Fit to Window** tool, see Using the IPVis Menus.

Using the Select Option

For more information on using the **Select** option, see Using the IPVis Menus.

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Using the Zoom Option

For more information on using the **Zoom** option, see Using the IPVis Menus.

Using the Pan Option

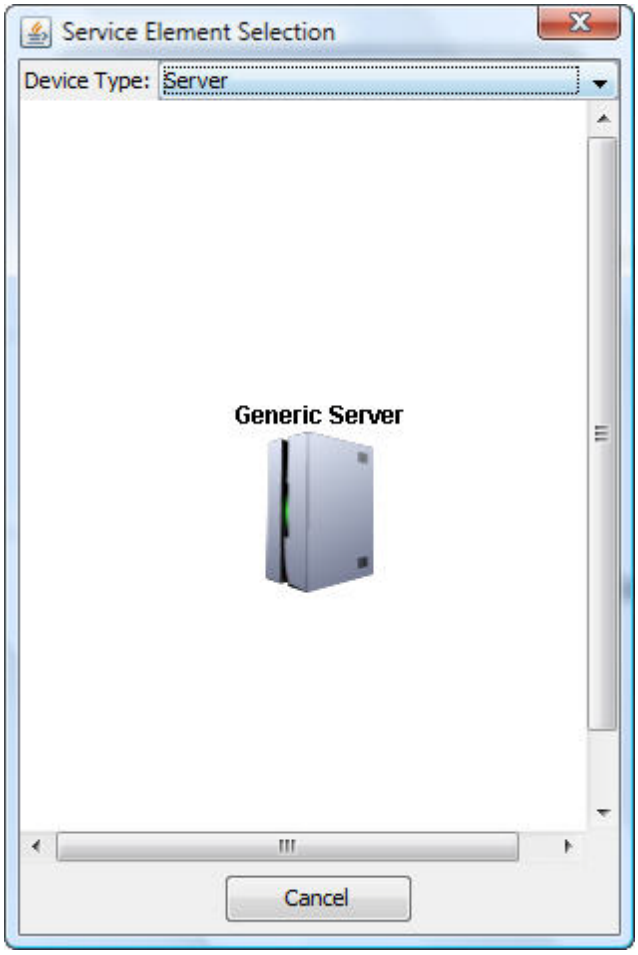
For more information on using the **Pan** option, see Using the IPVis Menus.

Using the Properties Option

For more information on using the **Properties** dialog box, see Using the IPVis Menus.

Using the Add Service Element Option

Using the **Add Service Element** option, a user can add new service elements to the existing IT infrastructure service display in the IPVis window. When you click the **Add Service Element** option, it opens the **Service Element Selection** box.



From the **Add Service Element** box, you can select different classes of device elements using the **Device Type** box. The following device elements can be added to the network topology:

- **Peripheral:** Using this category you can add devices such as desktop, multi-function printer, terminal server, and printer, desktop, IP phone.
- **Network:** Using this category, you can add devices such as wireless access points, firewalls, IP routers etc.
- **Server:** Using this category, you can add generic server.

Note: The device service element is placed in the area where you invoke the **Context** menu. Once the item has been placed, you can drag it to a desired location in the network display area.

Once a device has been added to the **Service Visualisation** canvas, you can configure its properties using the **Device Configuration** box.

For training purposes, the following procedure describes how to add a new **generic server** in the network display area.

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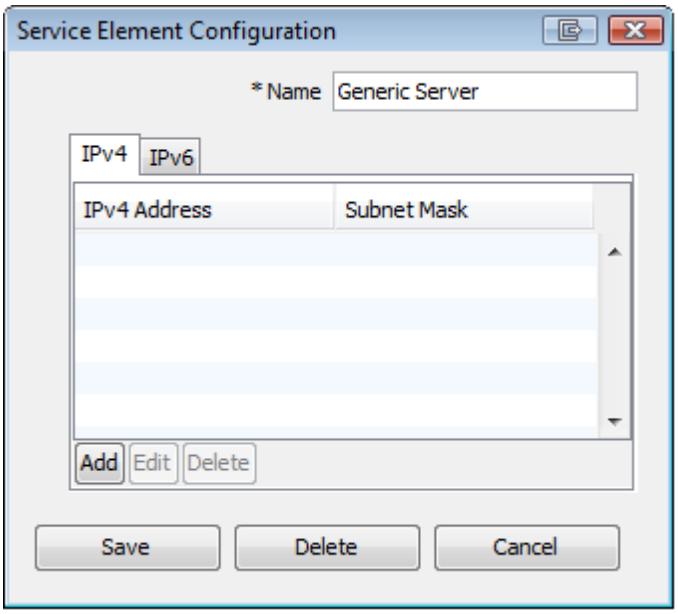
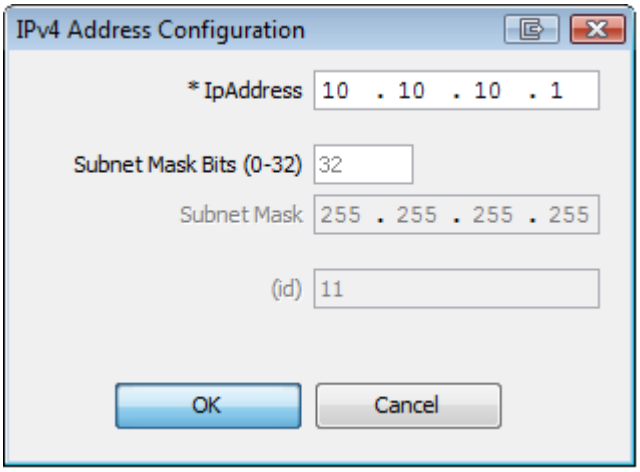
To configure a new service element or device

1. Right-click anywhere on the empty space on the IPVis window, it opens the **context** menu. From the **context** menu, click **Add Service Element**; it opens the **Service Element Selection** box.
2. From the **Device Type** box, select **Server**, the **Generic Server** icon appears in the main area. Click the **Generic Server** icon and it opens the **Service Element Configuration** box.



3. Do the following in the **Service Element Configuration** box:
   - **Name:** Enter the appropriate value.
   - **IP Address/Subnet Mask:** To add or modify the IP address of the server that you added, select the appropriate IPv4 or IPv6 tab, click the **Add** button, it opens the **IP Address Configuration** box.



   - Enter the appropriate values for the IP Address, CIDR Subnet Mask in the **IP Address** box and **CIDR Subnet Mask** box. Click the **Save** button, the values are mapped to the new server. It also closes the **IP Address Configuration** box. If the subnets overlap the subnets of an existing node then the server will be automatically linked to the other network elements. Use the **Edit** or **Delete** button to modify or delete the existing entries.
4. After entering all the appropriate values, click the **Save** button to save the device configuration settings.

To manually link the device with network topology elements

Note: The device can be manually linked or connected to other network elements regardless of the subnet overlap.

1. To manually create a link, right-click on the device that you want to be linked to other network elements, a **context** menu appears.

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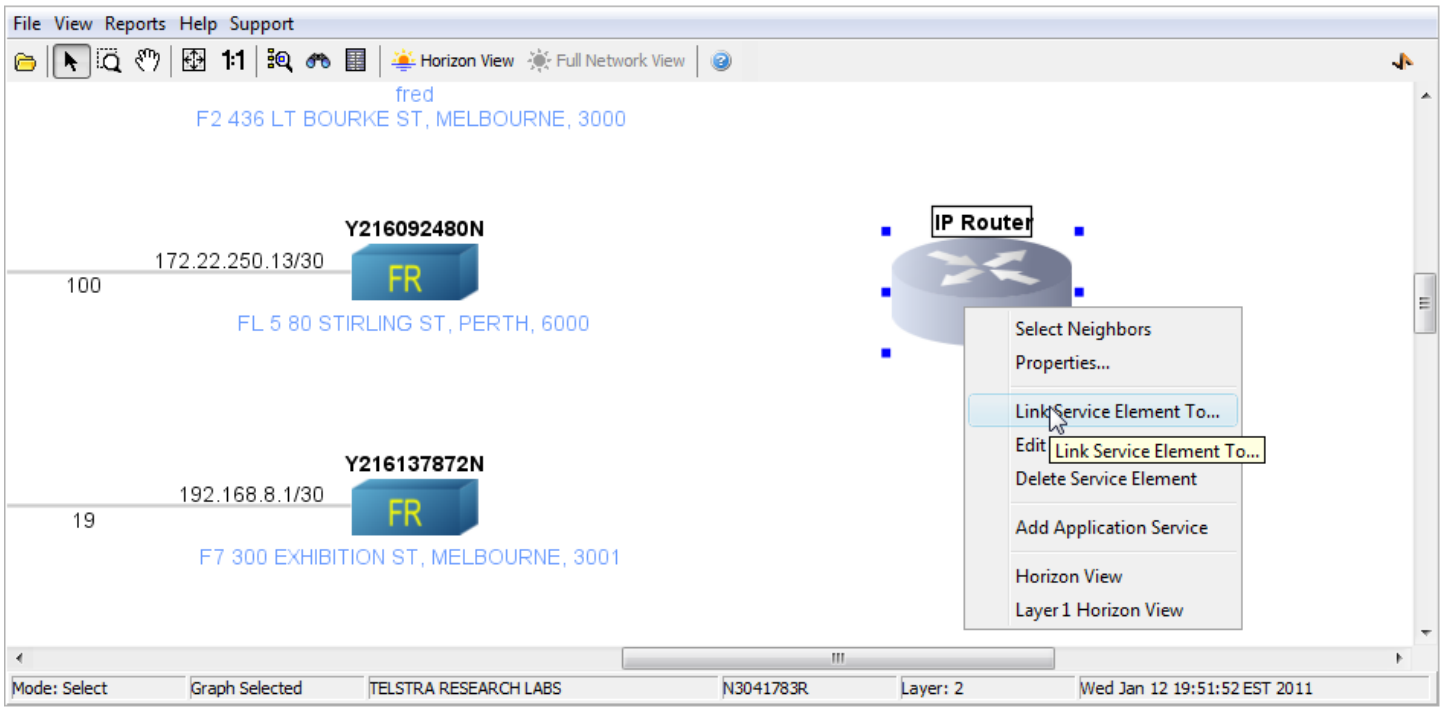
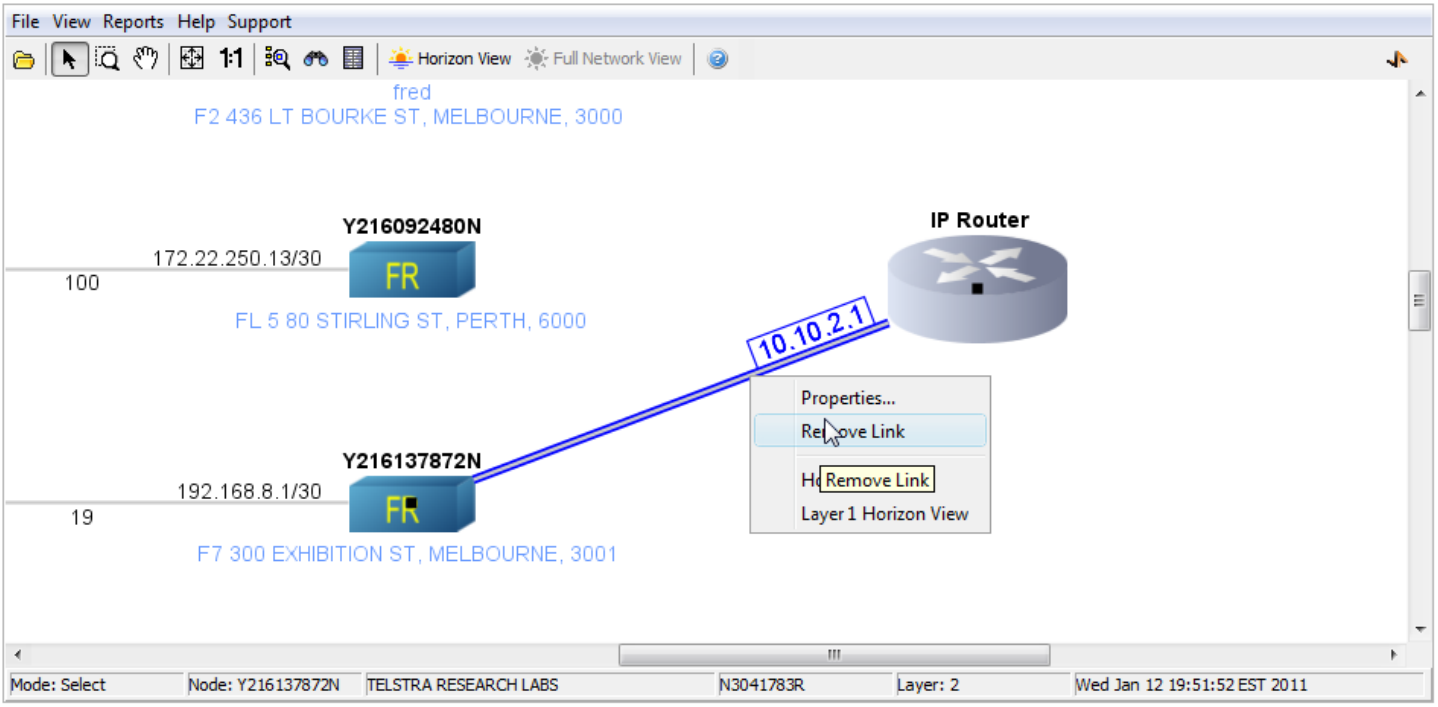


2. From the **context** menu, click the **Link This Node To** option, and then click the **network element** that you want to link to. It automatically creates a link between the two devices.

To delete the manual link between the service elements

1. To delete the manual link between two service elements, right-click the **link line**, a **context** menu appears.



2. From the **Pop-up** menu, click **Remove link**, it removes the link between two service elements.

To edit the service element information

1. To edit the service element information, right-click the **Server element**, a **context** menu appears.

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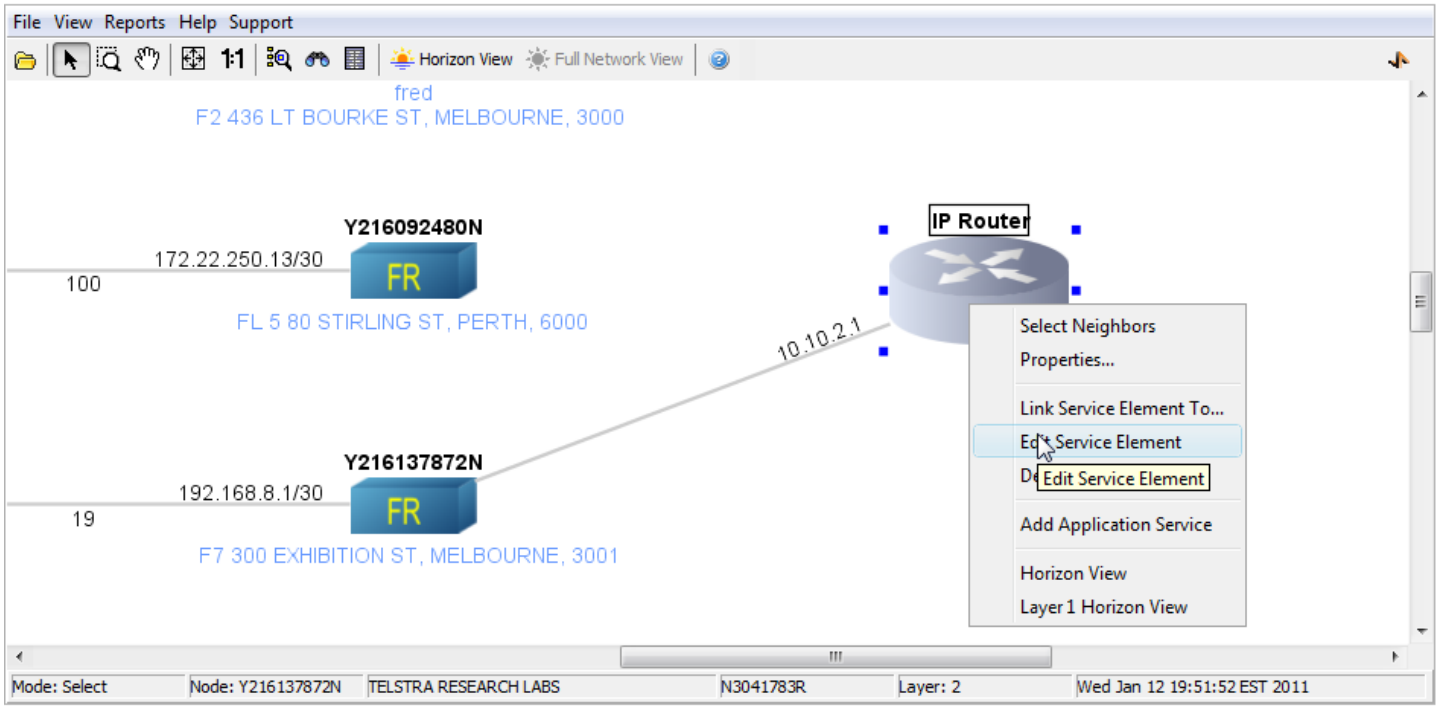

2. From the **context** menu, click the **Edit Service Element** option, the **Service Element Configuration** box appears.
3. Edit as required, and then click the **Save** button, the settings are modified.

To view the properties dialog box for the service element

1. To view the additional information or properties of the added service element, right-click the **service element**, a **context** menu appears.
2. From the **context** menu, click **Properties Dialog box**. The **Properties Dialog box** appears for the service element.

To delete the service element

1. To delete a particular service element, right-click the **service element**, a **context** menu appears.
2. From the **context** menu, click **Delete Service Element** option. A **confirmation** box appears for confirming the delete operation. To confirm deletion, click the **Yes** button, the service element is deleted from the network topology display. To cancel delete operation, click the **No** button.

Adding Application Services to the Service Element

You can add different application services to the network/device element that you added using the **Add Application Service** option from the **context** menu.

Note: If you have customer Drag and Drop privileges, then only you would be able to add, edit and delete application services to a service element.

The different types of application services available are as follows:

- **File services** – network file services such as NFS, AFP, FTP, SFTP.
- **Multimedia services** – services such as, HTTP, SIP, MP3, H.323.
- **Terminal services** – services such as Telnet, SSH, X11.
- **Management services** – services such as SNMP, ICMP, RMON.

To add an application service to the service element

1. To add an application service to the network/device element, right-click on the **element**, a **context** menu appears.

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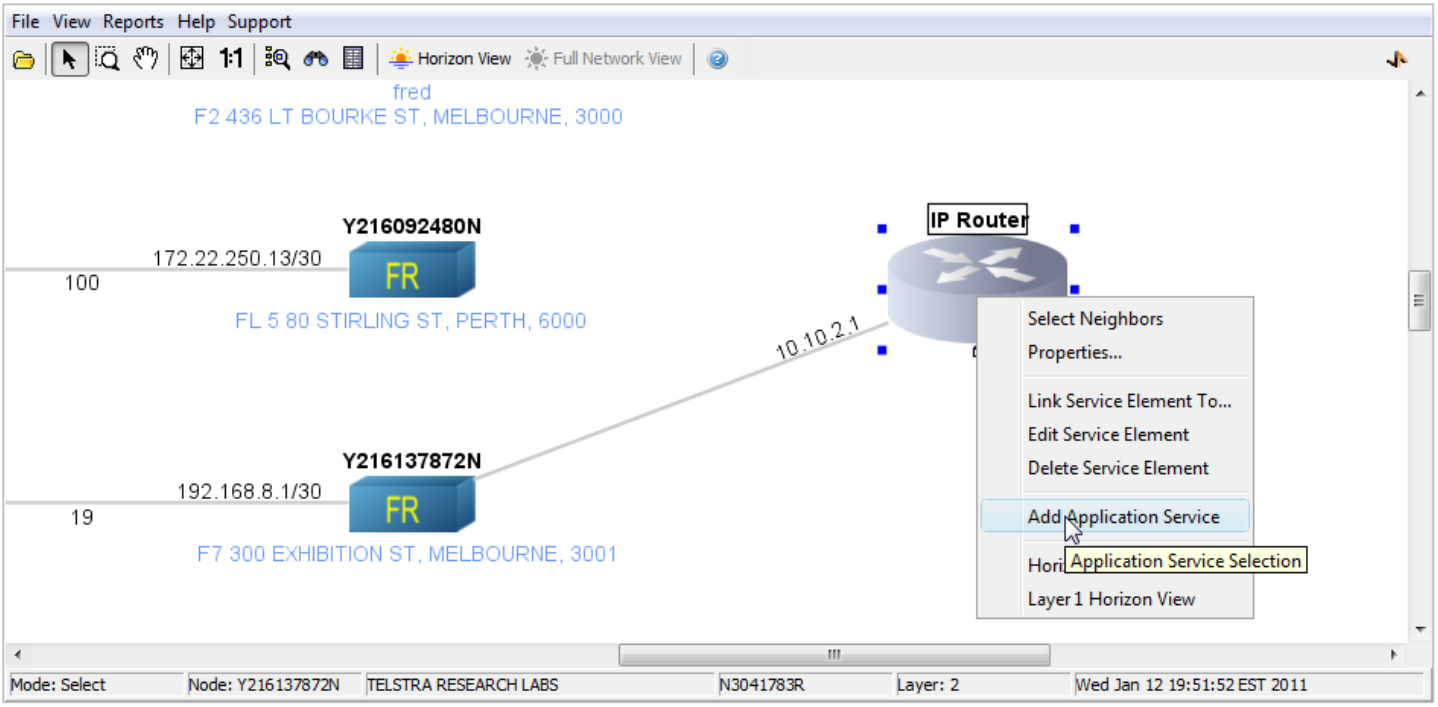
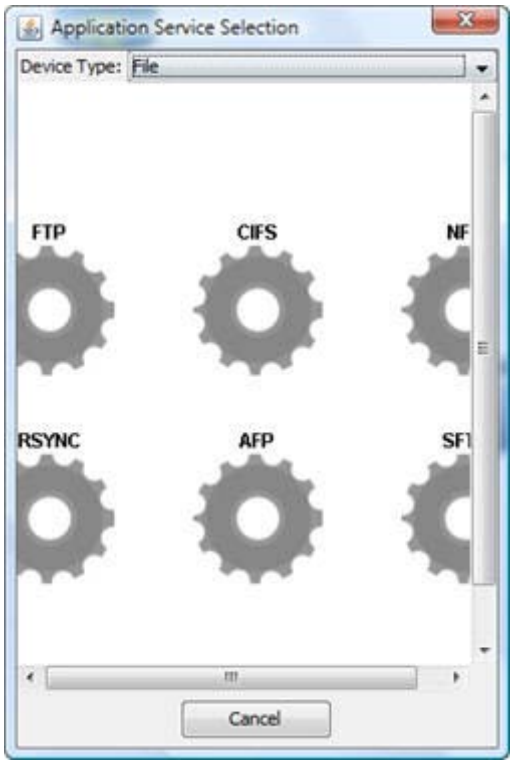


2. From the **context** menu, click **Add Application Service** option, it opens the **Application Service Selection** box.



3. In the **Application Service Selection** box, select the appropriate application service from the **Device Type** box. You can select **Multimedia**, **File**, **Terminal** or **Management**. Depending upon the **Device type** selected, the display area of the dialog box will be populated with appropriate icons. The graphic above displays the available services if you select Multimedia.
4. Click the service you want to add, the **Application Service Configuration** dialog box appears.

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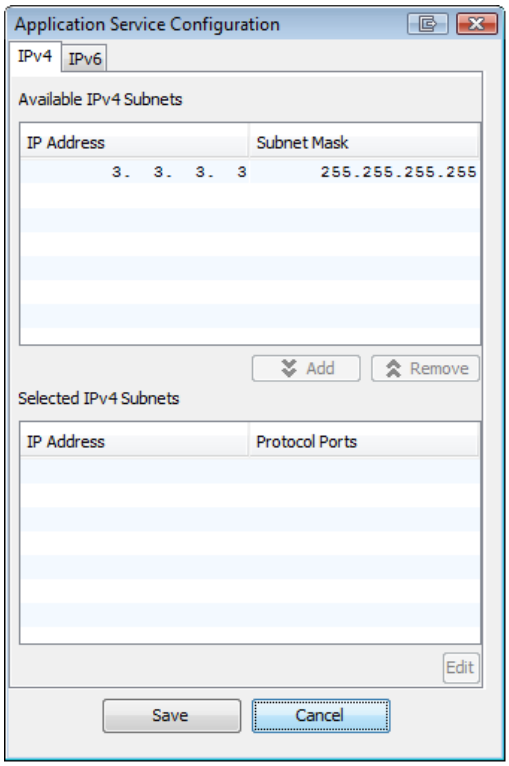
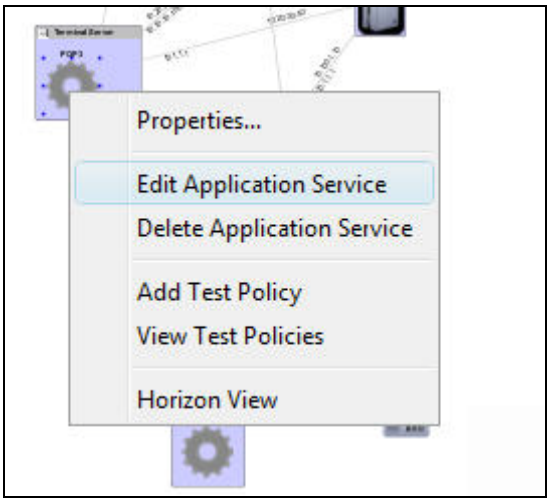


5. Select the appropriate IPv4 or IPv6 tab.
6. Select the IP address from the **Available IP Subnets** area using the **Up** button. It opens the **Protocol Port Details** box.
7. Enter a valid **Protocol Port Range** in the box and then click the **Ok** button. Then click the **Save** button of the **Application Service Configuration** dialog box.
8. The new added application service is added to the **service element**. To check whether the application service is added, click the **Plus** sign on the element, it expands to show all the added application services.

To edit the application services added to the service element

Note: For training purposes, the HTTP application service is edited in the procedure below.

1. To edit an existing application service, right-click on the **application service**, a **context** menu appears.



2. From the **context** menu, click **Edit Application Service** option, it opens the **Application Service Configuration** dialog box.
3. Double-click the row to edit, an **Input** dialog box appears.

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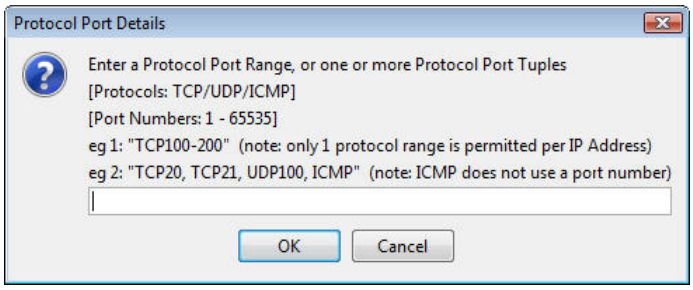

Protocol Port Details
Enter a Protocol Port Range, or one or more Protocol Port Tuples
[Protocols: TCP/UDP/ICMP]
[Port Numbers: 1 - 65535]
eg 1: "TCP100-200" (note: only 1 protocol range is permitted per IP Address)
eg 2: "TCP20, TCP21, UDP100, ICMP" (note: ICMP does not use a port number)
OK
Cancel

4. As mentioned in the **Input** box, enter the **protocol port range** for example HTTP20, and then click the **Ok** button. You have successfully edited the port information for the application service.

To delete the application service

1. Select the application service that you want to delete, and then right-click on the **application service**, a **context** menu appears.
2. From the **context** menu, click the **Delete Application Service** option. A confirmation box appears. Click **Yes** to confirm the deletion of the application service.

Setting and Resetting the Horizon View

Using the **Horizon View** functionality, you can display a sub-set of the full network. Horizon view allows you to view just a particular node or link (the anchor) and its neighbours, up to a set distance away (the **Horizon**). The horizon count determines the distance away from the anchor node or link, for example:

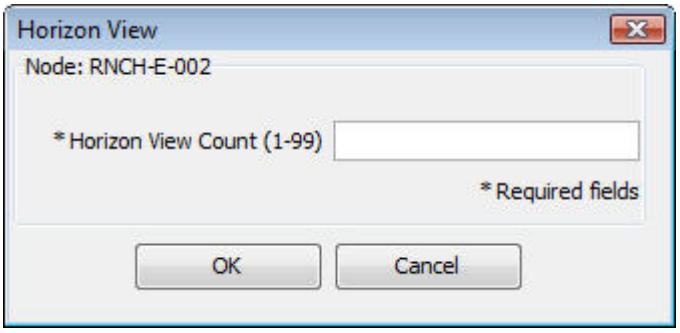
- A horizon count of one (1) will only display the anchor node itself.
- A horizon count of two (2) will display the anchor node and its immediate neighbours.
- A horizon count of three (3) will display the anchor node, its immediate neighbours and their neighbours.

Using the **Horizon View** functionality, you can display a particular node and the nodes linked to it instead of displaying the entire topology. You can enter or set the horizon count for a particular node, and then display a new topology based on the specified count number. Note that you can set the horizon count for all the network elements.

For training purposes, the procedure below describes how to set the horizon count of a router.

To set the horizon view

1. Select any node or link from the network view, and then right-click, a **context** menu appears.
2. From the **context** menu, click the **Horizon View** menu item, the **Horizon View** dialog box appears.



3. In the **Horizon View** dialog box, enter the required horizon count, for example 2 (which includes the node or link or its immediate neighbours), in the **Horizon View Count** box. Then click the **Ok** button. The network display is refreshed to display only 2 levels of horizon as shown in the graphic below.

To reset horizon view to full network view

1. To refresh the network view so that whole network can be displayed, click the **Show Full Network**

tool from the **toolbar**. The network view is refreshed.

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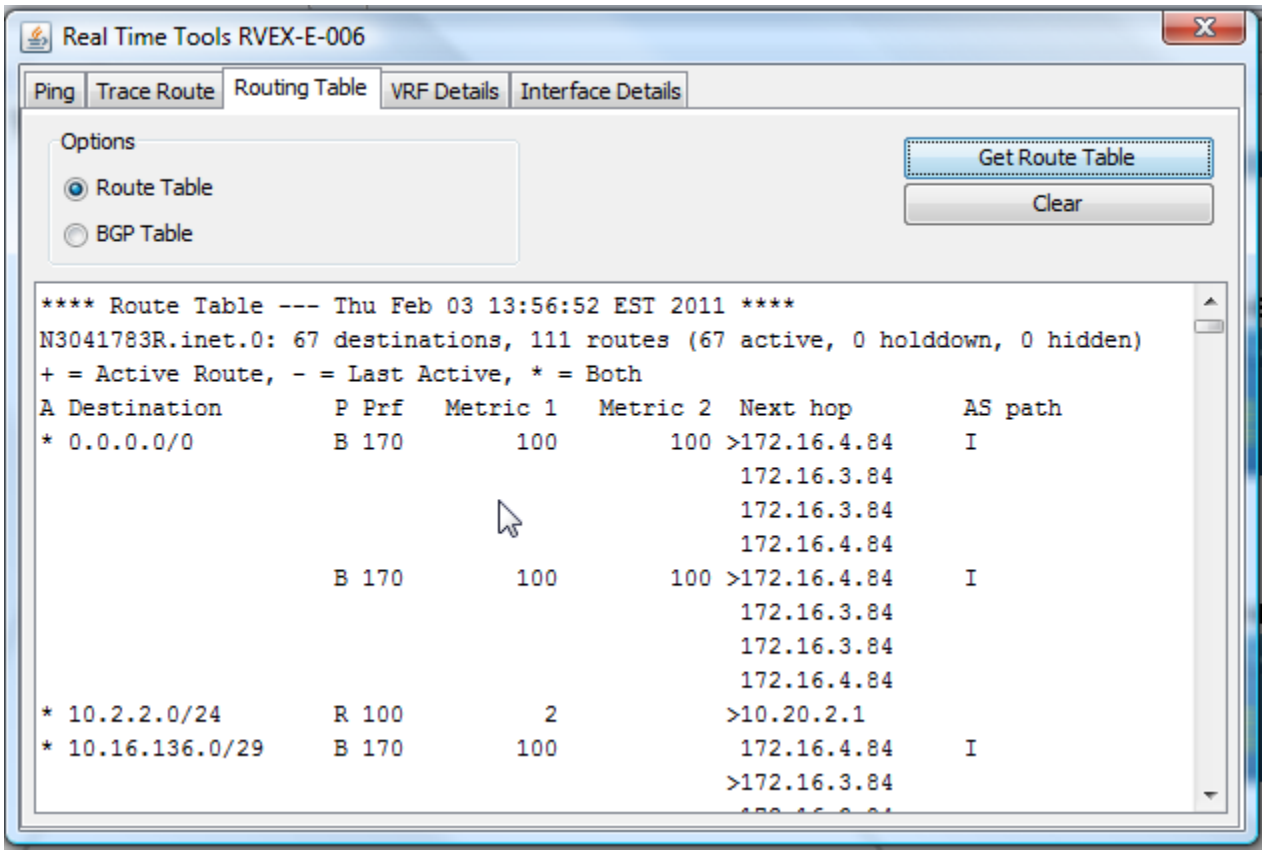
Understanding the Real Time Tools

The **Real Time Tools** are accessed from the devices' context menu. Though the **Real Time Tools** are available only for some network elements such as VRFs, basement switches, Floor switches, Telstra Managed CPE (MCPE) etc as defined in the user's profile. The options available may also vary based on user privileges, some users may not be permitted to see or perform some tests.

Note: Different devices have different real time testing options. For example, if you have selected **VRF (FAE)** then the available options are **Ping**, **Trace Route**, **Routing Table**, **VRF Details** and **Interface Details**. Alternatively, if you have selected **VRF (DAE)**, then the options available are **Ping**, **Trace Route**, **Routing Table**, **Subscribers**, **VRF Details** and **Interface Details** and so.

For training purposes, the procedures mentioned below describe the real time tools options for the VRF (FAE) router.

From **VRF router's** context menu you can perform ping tests on the connected network elements. Additionally, you can also view the routing table for the same. Right-click any of the VRF (FAE) router in the network view, a **context** menu appears. From the **context** menu, click **Real Time Tools**; it opens the **Real Time Tools** dialog box.



You can perform one or more of the following real time tests. Additionally you can retrieve related information such as interface details, VRF details about the devices. To activate the different options, click on the relevant tab.

The following options are available for the VRF routers.

- **Ping:** It is used to ping all the CPE neighbours of the VRF router.
- **Trace Route:** It is used to determine the route taken by packets.
- **Routing Table:** It is used to see the routing table.
- **VRF Details:** It is used to retrieve device, interface, policing, statistics and configuration details.
- **Interface Details:** It is used to get information such as statistics, policies associated with the interface connected to the device.

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To Ping the network elements

1. From the **Real Time Tools** dialog box, click the **Ping** tab. In the **Settings** area, select the **Source Address**, **Destination Address** and then click the **Ping** button. It pings the IP address and the result is displayed in the display area. Depending upon the result, the network element is also highlighted in the network view.

To use the Trace Route tab

1. From the **Real Time Tools** dialog box, click the **Trace Route** tab and then in the **Settings** area, do the following:
    - **Source Address:** Select the Source address.
    - **Destination Address:** Enter or select the destination address of the packet.
    - **Size of Packets (bytes):** Enter the packet size.
    - **Maximum Hops:** Enter the hops value.
    - **Timeout:** Enter the Time when you want.
2. Then click the **Trace Route** button, it displays the packet route results in the display area.
3. To clear the results from the right pane, click the **Clear** button from the **Results** area.

To use the Routing Table tab

1. From the **Real Time Tools** dialog box, click the **Routing Table** tab.
2. In the **Options** area, select the **Route Table** option and then click the **Get Route Table** button. The results are displayed in the display area.
3. Alternatively, to get the BGP table information, select the **BGP Table** option and then click the **Get BGP Table** button, it displays the relevant information.
4. To clear the results from the display area, click the **Clear** button.

To use the VRF Details tab

1. From the **Real Time Tools** dialog box, click the **VRF Details** tab.
2. From the **Options** area, do the following:
    - Select the required option that you want to get the detail of, for example VRF Details.
    - Then click the **Get VRF Details** button, the display area below displays the relevant details.
3. To clear the area, click the **Clear** button.

To use the Interface Details tab

1. From the **Real Time Tools** dialog box, click the **Interface Details** tab, the corresponding tab appears.
2. From the **Options** area (which may vary based on user privileges) click the option for which you want to get the detailed information for example **Interface List**, and then click the **Get Interface List** button. The relevant information appears in the display area below.
3. To clear the display area, click the **Clear** button.

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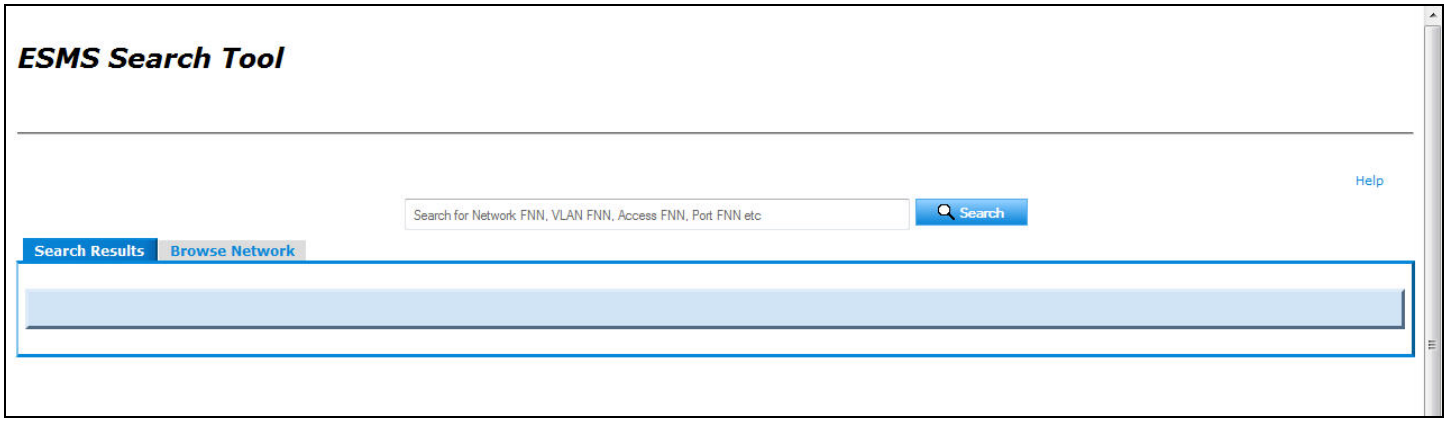
Understanding Advanced Search

The advanced search functionality is used to facilitate search operations for different customer networks and their network elements. The functionality is accessed through a separate window. Using a web-based user interface, called the **ESMS (IPVis) Advanced Search** window, you can enter the search criteria on the web page and on clicking the **Search** button; the search results are displayed in the tabular form.

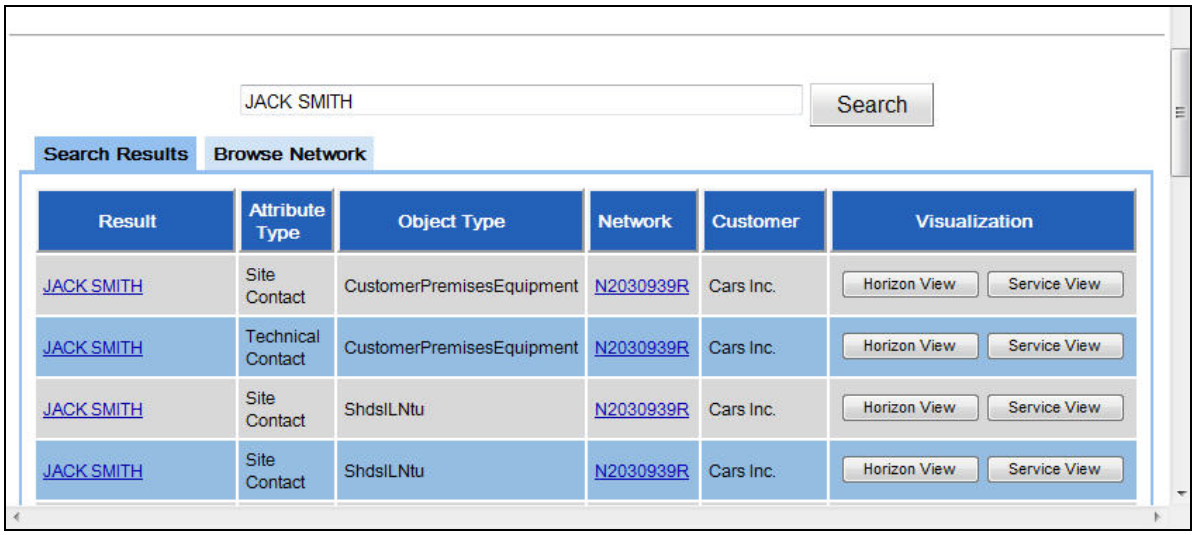
The graphic below shows the initial web page for the Advanced Search functionality.



You can search using different options, such as network's **FNN number**, network elements' different attributes, such as **customer name**, **site contact name**, **location address, customer ID (CIDN), device name, alias,** and much more.

To search for a network or a network element

1. In the **ESMS(IPVis) Advanced Search** window, enter the search string, for example *JACK SMITH.* It can be a location name, name, site contact name, Network FNN, CIDN or customer name, and then click the **Search** button. It displays the result in the tabular form. **Note that at least 4 to 5 characters are required in search field in order to get Search look ahead drop-down list.**



2. Click the **Horizon view** button; it opens a partial view of the network with the launched item highlighted at the centre of the view and adjoining devices of up to 3 hops away to provide a horizon view.
3. Click the **Service View** button, it opens the whole network in different browser window.
4. To search for a network FNN, click the **Browse Network** tab, enter the network **FNN number** in the box and then click the **Display** button. It shows the appropriate network and list of the all the elements in the network.
5. Clicking Service View button from browse network tab will also open up the whole network in different browser window.

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6. When the mouse is hovered over the element information, the row in web search window will be highlighted. And clicking will display network in default level of horizon view.

To open reports from web search

1. Click the **Browse Network** tab, enter the network **FNN number** in the box and then click the **Display** button. It shows the appropriate network and list of the all the elements in the network.
2. Select any report from **Select report to generate** drop down and click **Generate Report**.

IPVis supports the following reports:

- **Drag and Drop Report - PDF**: Using this report you can generate and view the customer inventory report. Customer inventory report shows all the Drag & Drop elements from the network. You can save this report in .pdf format
- **Drag and Drop Report - CSV**: Using this report you can generate and view the customer inventory report. Customer inventory report shows all the Drag & Drop elements from the network. You can save this report in .csv format.
- **Access Services Reports:** Using the **Access Services Reports** submenu, you can generate and view the customer accesses and Telstra managed CPE for a given Network FNN in .pdf.
- **Service Inventory Reports:** Using the **Service Inventory Reports** submenu, you can generate and view the Telstra services (serviced marked by FNN) belonging to a CIDN or a VPN belonging to a CIDN, their location and type/name, contacts, parent VPN, without details of service technical configuration.
- **Service Configuration Reports:** Using the **Service Configuration Reports** submenu, you can generate and view the Telstra services (serviced marked by FNN) belonging to a CIDN or a VPN belonging to a CIDN, their location and type/name, contacts, parent VPN, with details of service technical configuration.
- **Planned Outage Report - CSV**: This report generates a list of Services, keyed by service identifier number that will be affected by a planned outage within the next 30 days. Services that have the adornment ‘planned outage’ is service view are listed in the report.

For more information on reports, see **Understanding Reports** section.

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Understanding Reports

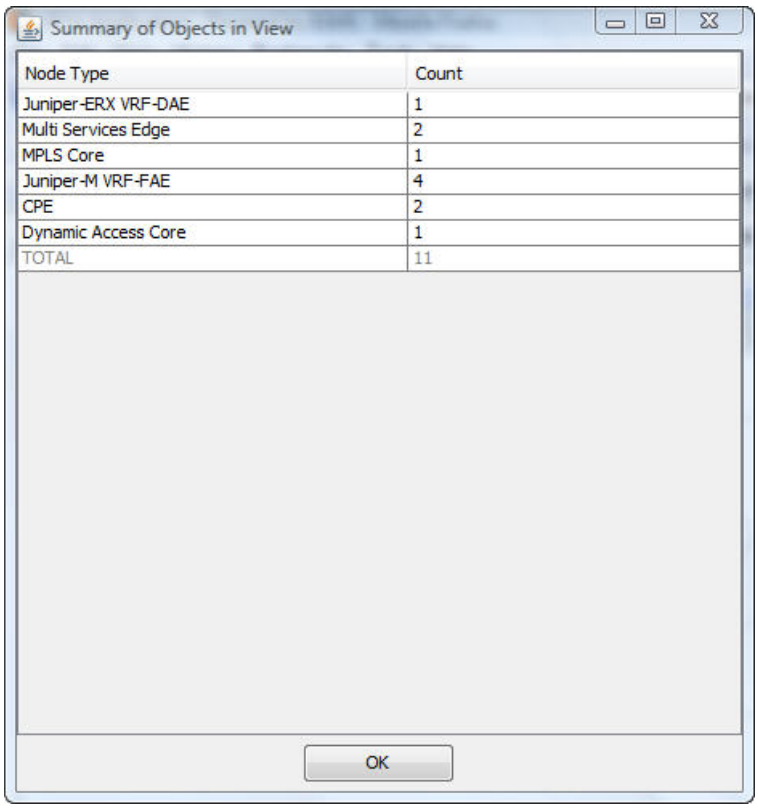
Using the report's functionality, you can view and generate various reports about certain aspects of your network and service. IPVis supports the following reports:

- **Summary of View:** Displays an analysis of the service provider products and services within the currently displayed service solution. Changing the Horizon View size can change the summary count.
- **Drag and Drop Report - PDF**: Using this report you can generate and view the customer inventory report. Customer inventory report shows all the Drag & Drop elements from the network. You can save this report in .pdf format
- **Drag and Drop Report - CSV**: Using this report you can generate and view the customer inventory report. Customer inventory report shows all the Drag and Drop elements from the network. You can save this report in .csv format
- **Access Services Reports:** Using the **Access Services Reports** submenu, you can generate and view the customer accesses and Telstra managed CPE for a given Network FNN.
- **Service Inventory Reports:** Using the **Service Inventory Reports** submenu, you can generate and view the Telstra services (serviced marked by FNN) belonging to a CIDN or a VPN belonging to a CIDN, their location and type/name, contacts, parent VPN, without details of service technical configuration.
- **Service Configuration Reports:** Using the **Service Configuration Reports** submenu, you can generate and view the Telstra services (services marked by FNN) belonging to a CIDN or a VPN belonging to a CIDN, their location and type/name, contacts, parent VPN, with details of service technical configuration.
- **Planned Outage Report - CSV**: This report generates a list of Services, keyed by service identifier number that will be affected by a planned outage within the next 30 days.

The reports functionality can be accessed from the **Reports** menu of the IPVis solution or the network browse part of Advanced Search, except for the Summary of View.

Viewing the Summary of View Report

To view the **Summary of View** report, click the **Summary of View** submenu from the **Reports** menu. It opens the **Summary of View** dialog box. The dialog box displays all the network elements and their count in currently open customer network.



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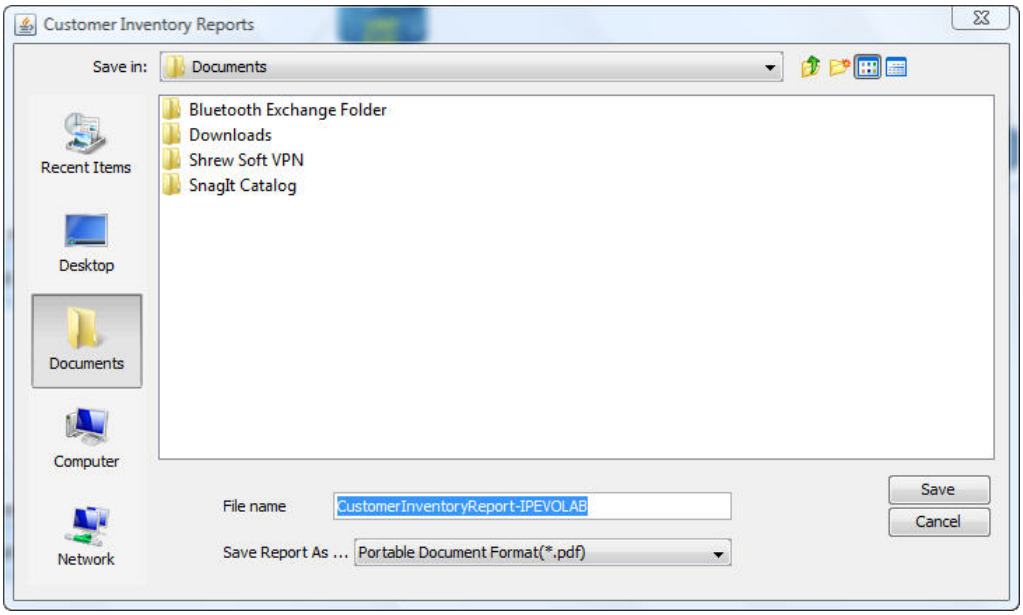
Viewing Drag and Drop Report

To view and generate the Drag and Drop report, click the **Drag and Drop** submenu from the **Reports** menu



Do the following in the **Drag and Drop Report** dialog box:

1. Select the location for saving the report from the **Save in** box.
2. Enter an appropriate name for the report in the **File name** box. And then select the format for the report from the **Save Report As** box. You can either select **PDF** or **CSV** format.
3. Click the **Save** button to save the report. If you do not want to save the report, click the **Cancel** button.

Viewing the Access Services Report

To view the **Access Services** report, from the **Reports** menu, click the **Access Services Report** submenu, the **Access Services Report** dialog box appears.

Do the following in the **Access Services Report** dialog box:

1. Choose an appropriate location where you want to save the report from the **Save in** box.
2. Enter the appropriate name for the report in the **File name** dialog box.
3. Select the required image resolution from the **Image Quality** box, and then click the **Save** button. It saves the report at the desired location. Double-click the file to view the report and search within the file. To maintain report generation to and report size to a reasonable level, IPVis quality options are more restricted for the larger VPNs. A user has the option not to have diagrams included.

Viewing the Service Inventory Report

To view the **Service Inventory** report, from the **Reports** menu, click the **Service Inventory Report** submenu, the **Service Inventory Report** dialog box appears. Choose an appropriate location where you want to save the report and then click the **Save** button. It saves the report at the desired location in the CSV format. Double-click the CSV file to view the report.

Viewing the Service Configuration Report

To view the **Service Configuration** report, from the **Reports** menu, click the **Service Configuration Report** submenu, the **Service Configuration Report** dialog box appears. Choose an appropriate location where you want to save the report and then click the **Save** button. It saves the report at the desired location in the CSV format. Double-click the CSV file to view the report.

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Viewing the Planned Outage Report

To view the **Planned Outage** report, from the **Reports** menu, click the **Planned Outage Report** submenu, the **Planned Outage Report** dialog box appears. Choose an appropriate location where you want to save the report and then click the **Save** button. It saves the report at the desired location in the CSV format. Double-click the CSV file to view the report.

Note that if there are no planned outages known to IPVis within the 30 day forward horizon, the report will have nil content except for the header section. The report only lists the date and reference number of the event.

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Tips on Product Visualisation

Network Types Displayed by IPVis

As at the date of this document, IPVis currently displays four network types, although only IP VPNs are listed in the IPVis customer portal home page.

Only networks that have a valid customer ID known to IPVis and the portal are accessible to customers. Telstra Staff have access to all networks even those with proxy or test FNNs.

Customers that have no IP VPN services will require their Customer ID to be registered added in the portal as part of IPVis access provisioning before in order to see the 3 non IPVPN networks in IPVis.

Only operationally active/commissioned services are displayed.

IP VPNs

IP VPNs comprising fixed and dynamic access services an IP Gateway connection are displayed. Customer Edge routers that are not Telstra managed are not displayed. Display of Connect IP DSL CPE, Connect IP standard CPE, and Connect IP Wireless is being considered for future releases.

Access services and Managed CPE associated with the IPVPN, whether they share same CIDN as IPVPN, are displayed.

Type 2 DSL and CIP DSL services are displayed similarly to fixed access services.

L2 VPNs

All Frame Relay, ATM, and Ethernet Lite services associated with a customer ID (CIDN), whether serving as an IPVPN access or not, are displayed as part of a network under the proxy network ID that is the same as the customer ID. By searching on the customer ID or the customer name in Advanced Search, all networks.

The FR, E-Lite and ATM icon and their respective properties represent the access link and access link properties.

The lines connecting the FR, E-Lite and ATM icons to MSE icons represent PVCs. These lines have the FR DLCI and ATM VPI.VCI labels.

Where a fixed access service does not have an active PVC, the access is not displayed, but the access FNN may be listed as a property on the terminating MSE node.

There are no real time tool options available on L2 VPNs.

Ethernet MAN and Ethernet Campus

Each Ethernet MAN and Ethernet Campus service is displayed as a network.

Terminating CPE or associated Telstra Internet Direct (TID) ports are not displayed.

Telstra Managed CPE

Managed groups of CPE are given a Managed CPE group/network FNN, distinct from the IPVPN FNN. Such network may comprise WAN router, or CPE in the enterprise domain.

By searching on customer name of Customer ID (CIDN), such MCPE network FNNs will be listed.

The Managed CPE network displays WAN device connection to the first node of the IPVPN. Its prime purpose is to show MCPE properties, especially in cases where the MCPE are associated with L2VPN. However, topology information will be quite limited.

No customer real time tools are available on MCPE devices.

Real Time Tools

A range of real time tools are available to customers on FAE and DAE Telstra IP Edge routers.

Real time tools on Ethernet switches and MCPE are enabled for staff.

The response to ‘show interface list’ on FAE nodes shows interface names comprising a concatenation of IPVPN FNN and the FR, ATM, E-Lite access FNN associated with the router interface. For IPMAN/Government IP Ethernet services, the interface name is a concatenation of the VPN FNN and the VLAN FNN (not port FNN).

If an access service has been cancelled but not yet the associated IP interface, then the access FNN will be listed in the interface list, but with a ‘down’ status.

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The ‘interface’ related queries, available only to staff, require that the interface ID of interest be copied from the response to show interface list and pasted as a parameter. In case of DAE where the interface tunnel name is long and wraps around the extra characters due to wrapping should be deleted so that valid interface name is submitted by the query.

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Appendix 1: Additional Information

While setting up or deploying the IPVis solution, it might be possible that you encounter some common problems that may stop the successful installation and running of the IPVis. The following sections may help you in identifying some common problems and their possible solutions.

Installing Java Plug-in

If the Java plug-in is not installed on your computer prior to installing the IPVis solution, or if it is of older version, then you would be prompted to download it. Click to install the activeX control.

Once you have allowed the ActiveX control, you are prompted to install the appropriate Java plug-in. If you encounter an error while installing, you need to manually install the Java Plug-in.

To install the Java plug-in manually

1. Open the Web browser and browse to Sun Java website. On the Website, click the manual download button to download the appropriate Java Plug-in for your operating system.
2. To successfully install the Java plug-in for your operating system, follow the steps mentioned on the website. The Java plug-in is installed on your system to run the IPVis solution.

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Appendix 2 : About Toolbar and Status bar

The following sections describe the components of the IPVis **Toolbar** and **Status bar**.

Understanding the Toolbar Icons

The table below briefly describes the components of the IPVis **toolbar**.

Icon	Description
Open	Using the **Open** icon, you can open different customer networks.
Select	Using the **Select** icon, you can select and move different elements or objects within the IPVis window to obtain more information about them.
Zoom	Using the **Zoom** icon, you can select any object or area in the window to magnify that selected area. This is useful in enhancing the visibility, especially in case of large networks.
Pan	Using the **Pan** icon, you can grab the view and move it around the window.
Fit to Window	Using the **Fit to Window** icon, you can scale down the network diagram to fit within the current view.
Actual Size	Using the **Actual Size** icon, you can scale the view to its actual size.
Open Overview window	The **Overview** icon enables you to see the entire network in a separate pop-up window regardless of the zoomed state of the main view.
Open Search window	Using the **Search** icon, you can search for information, for example, you can search for a site contact name. To do so, it uses a dialog box to take the input and then searches for the string through the entire graph. It highlights the corresponding matches on the network and allows you to navigate to every occurrence of the matched string.

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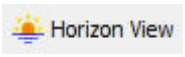
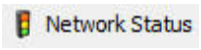
Icon	Description
Open Property window	The **Properties** icon opens the properties windows to display additional details of the selected object.
Horizon View 	The Horizon view icon is used to set horizon view for a network device or element. Note that the icon is activated when you select a network device.
Show Full Network Topology	The **Show Full Network** tool is used to reset the network view back to viewing the entire network if the display is currently in the Horizon View.
Network Status 	Using the **Network Status Display** icon, you can perform tests on the network devices in a customer network, to determine the network elements or devices availability.
Help	The **Help** icon displays the help information for the application.

Using the Network Status Display Tool

The **Network Status Display** tool provides the ability to perform a test on the network to determine the health of the various VPN services. The results of the tests are displayed in the network view. This test is performed from within the core network out to the network elements at your business locations. **Network Status Display** (NSD) also displays the overall connectivity of the fixed type accesses of your solution.

The **Network Status Display** tool uses colour coding to display whether the network devices can be contacted or not. If a node is displayed in **red**, it means the object has not replied to the ping test. If a link is displayed in **red** then it means that the network port that connects to the link is down. On the other hand the **green** link indicates that the port is up and a **green** device indicates the device has responded to a ping request.

When a link is shown in red, it is unavailable either due to a fault or being administratively shut down, and as a consequence will cause the test to your equipment to also indicate a failure. All green indicates the link is up and the CPE has responded to the test request.

You can reset the coloured status indicators results by selecting **Reset Network Status Display** from the **View** menu.

Using the Virtual Router Ping Test

The **Virtual Router (VRF) Ping** test can be invoked by selecting the "**Ping CPEs**" option from the VRFs context menu. This test will attempt to ping every CPE device directly or indirectly connected to the **Virtual Router** and indicate the result of this test on the CPE devices. Note that CPEs contactable only by traversing the VPN Core cloud are not testing candidates for this test. The results of the tests are displayed by shading the background of the CPE devices either green or red.

Using the Virtual Router Protocol Test

The **Virtual Router (VRF) Protocol** test can be invoked by selecting the "**Refresh Protocol Port Status**" option from the VRFs context menu. This test will query the port status each of the interfaces on the **Virtual Router** and indicate their status. The results of the tests are displayed by shading the links emanating from the router either green or red. Links that remain grey after initiating this test are not testable. Shading of the link between the Virtual Router and the VPN Core cloud indicates that the router was successfully contacted.

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Understanding the Status bar Components

The **Status bar** is the long horizontal bar at the bottom of the IPVis application.

It has following sections:

Note: The information displayed in the status bar varies with the VPN element or service selected. In the above example, the **Select** mode is shown.

- The first section shows you which tool you are currently using. In the example, it indicates that the **Select** tool is currently active.
- The second section shows the selected Node's name.
- The third section shows the customer name.
- The fourth section shows the customer's VPN Id.
- The last section shows the time of last data update for the displayed VPN.

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Acronyms, Terms and Definition

The following terms mentioned in the table below are used in the document.

Term	Definition
ADSL	Asymmetric Digital Subscriber Line. A data communication technology that enables faster data transfer over copper telephone lines than a conventional voice band modem can provide.
AFP	AppleTalk File Protocol. It refers to the network protocol that enables file sharing to work across an AppleTalk Network.
BDSL	Business ADSL. Now superseded by Ethernet Lite (E-Lite), providing customer Ethernet interface mapped onto an ATM private virtual circuit (PVC). Recent services also employ Ethernet over the First Mile (EFM) technology.
CIDR	Classless Inter-Domain Routing. A scheme that allocates blocks of internet addresses in such a way that it enables summarisation into a smaller number of routing table entries.
CIR	Committed Information Rate. Access bandwidth provisioned to carry higher priority FR traffic.
CPE (Customer Premises Equipment)	CPE refers to any equipment or element located at the customers' premises.
DAE	IP Dynamic Access Edge routers supporting non fixed access IPVPN connections such as PSTN, ISDN, Mobile Wireless, ADSL
DLCI	Data Link Connection Identifier used to identify FR PVCs
EIR	Excess Information Rate. FR traffic marked as discard eligible.
EPE	Ethernet Port Extension
IPVis	IPVis is a service management solution for IP VPN business solutions. It displays a topological view of network inventory and has a range of real time, personalisation and reporting/exporting features. IPVis is Telstra's version of IPV Solutions ESMS product.
FAE	IP Fixed Access Edge router supporting fixed access IP VPN services.
FR	Network access service supporting Frame Relay protocol, capable of supporting multiple PVC, each identified by a DLCI
FTP	File Transfer Protocol
ICMP	Internet Control Message Protocol. It is refers to the TCP/IP protocol used to send control and error information regarding IP data gram transmissions.

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Term	Definition
LAN	Local Area Network
MAC	Management Access Control chassis at the exchange end of OMC or EPE
MPLS	Multi Protocol Label Switching technology
MSE	Multi-Service Edge. Network node terminating customer Frame Relay (FR), ATM, and Ethernet Lite (previously BDSL) , Business IP Frame Relay, Business IP Ethernet Lite, and Connect IP fixed access services
NFS	Network File System
OMC	Optical Media Converter (on optical modem) providing Ethernet interface
POP	Post Office Protocol
QinQ	A type of 802.1q Ethernet protocol tunnelling service.
Regex	Regular Expression. The Search dialog can perform regular expression searches based on the Java regular expression strings. Further details on regular expressions can be found at: http://download.oracle.com/javase/tutorial/essential/regex/intro.html
RMON	Remote Monitoring. It refers to a standard used in telecommunications equipments, such as routers that implement a MIB (Management Information Base). This allows for remote monitoring and management of the network equipments.
SFTP	Secure FTP. It refers to the network protocol that enables you to transfer files and perform operations like changing the permissions of a remote file.
SNMP	Simple Network Management Protocol
SSH	Secure Shell
VLAN	Virtual LAN. A label separating different Ethernet traffic flows.
VPI.VCI	Virtual Path Identifier; Virtual Connection Identifier. Used to identify ATM service connection
VPN	Virtual Private network.

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